項 次	規章名稱	修訂內容	新增項目	頁碼	說明
1	2.4安全輔助評等規章-2.4.1乘員狀態監測系統評等	◎		P.1-50	依 Euro NCAP 安全輔助評等規章 10.4 版，修訂乘員狀態監測系統(OSM)之駕駛狀態監測系統(DSM)及安全帶提醒裝置(SBR)評等標準。
2	3.10緊急煞車輔助系統(車對車)試驗規章	◎		P.51-159	依 Euro NCAP 緊急煞車輔助系統試驗規章 4.3.1 版，新增轉彎穿越路徑情境試驗、直行交匯路徑情境試驗、前方對向來車直行情境試驗、前方對向來車變換車道情境試驗。
3	2.4安全輔助(SA)評等規章-2.4.3緊急煞車輔助系統(車對車)評等	◎		P.160-194	依 Euro NCAP 安全輔助評等規章 10.4.1 版，新增轉彎穿越路徑情境試驗、直行交匯路徑情境試驗、前方對向來車直行情境試驗、前方對向來車變換車道情境試驗之評等標準。
4	3.12車道輔助系統試驗規章	◎		P.195-231	依 Euro NCAP 車道輔助系統試驗規章 4.3 版，修訂緊急車道維持輔助系統(ELK) 、車道維持輔助系統(LKA)、車道偏離輔助警示系統(LDW)以及盲點偵測系統(BSM)試驗情境。
5	2.4安全輔助評等規章-2.2.4車道輔助系統評等	◎		P.232-245	依 Euro NCAP 安全輔助評等規章 10.4.1 版，修訂緊急車道維持輔助系統(ELK) 、車道維持輔助系統(LKA)、車道偏離輔助警示系統(LDW)以及盲點偵測系統(BSM)評等標準。
6	3.14盲點輔助系統試驗規章	◎		P.246-252	修訂盲點輔助系統試驗條文內容。
7	2.4盲點輔助系統評等規章	◎		P.253-254	依 TNCAP 第 29 次工作組會議決議，修訂盲點輔助系統(BSS)評等標準。

2.4.1乘員狀態監測系統評等 **<<本案暫以2.4規章編號說明乘員狀態監測系統評等條文修訂內容，後續擬修訂至2.1安全駕駛評等規章 >>**

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3 OCCUPANT STATUS MONITORING **3.2 Definitions** … **Direct Monitoring** – Where driver state determination is supported by sensor(s) directly observing the driver. **Indirect Monitoring** – Where driver state determination is achieved indirectly through means other than sensor(s) directly observing the driver (e.g. steering input).	**3 OCCUPANT STATUS MONITORING** **3.2 Definitions** …	2.4.1 乘員狀態監測系統評等 2.4.1.1 名詞釋義 … 2.4.1.1.3 直接監測(Direct Monitoring)：駕駛狀態確認係由直接觀察駕駛之感測器支援。 2.4.1.1.4 間接監測 (Indirect Monitoring)：駕駛狀態確認是透過非直接觀察駕駛之感測器（例如轉向輸入）方式間接實現。	2.4.1 乘員狀態監測系統評等 2.4.1.1 名詞釋義 …
Impaired driving – A driver who is disconnected from the driving task or not in a physical state that is sufficient for safe driving, either due to distraction, fatigue or sickness.	**Impaired driving** – A driver who is disconnected from the driving task or not in a physical state that is sufficient for safe driving - **Fatigue** – State of the driver where he/she is not awake enough to properly perform the driving task	2.4.1.1.5 駕駛能力減損 (Impaired driving) : 駕駛過程中因分心、疲勞或疾病中斷其駕駛任務，或身體狀態不足以充分完成安全駕駛。	2.4.1.1.3 駕駛能力減損 (Impaired driving) : 駕駛過程中斷其駕駛任務，或身體狀態不足以充分完成安全駕駛。 (1) 疲勞:駕駛無法以清醒狀態正確執行駕駛任務。(同 2025 年版 2.4.1.1.7)
Distraction – Anything (e.g. secondary tasks) that reduces the driver's focus on	- **Distraction** – Anything (e.g. secondary tasks) that avoid the	2.4.1.1.6 分心:任何事物（例如:次要任務）致使駕駛無法專注於駕駛/操控車	(2) 分心:任何事物(例如:次要任務)致使駕駛無法專注於駕駛/操控

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the primary task of driving/controlling the vehicle. - **Long Distraction** – A single long duration distraction which takes the driver's gaze away from the forward road view. - **Short Distraction / Visual Attention Time Sharing (VATS)** – Repeated short duration gazes away from the forward road view, which cumulatively reduce the driver's awareness of the driving situation, until their attention returns to the driving task for long enough for them to fully assess the driving situation. - **Phone Use** – A subset of short distraction (VATS) where the object the driver's attention is shared with is their mobile phone. **Fatigue** – State of the driver where he/she is not awake enough to properly perform the driving task	driver to focus on the primary task of driving/controlling the vehicle - **DUI** – Driving Under the Influence of alcohol or drugs - **Sudden sickness** – An instant and unexpected illness wherein the driver is not able to perform his driving task	輛的主要任務。 (1) 長期分心:指單一且持續時間較長之分心事件，使駕駛視線移開前方道路視野。 (2) 短期分心/視覺注意力時間共享(VATS): 指多次短期地將視線從前方道路視野移開，致使駕駛逐漸降低對行駛情況之察覺，直到駕駛將注意力能夠長期回到行駛任務上，並充分評估當前行駛狀況為止。 (3) 手機使用:短期分心(VATS)一個子集(subset)中，其指駕駛將注意力分散於手機上。 2.4.1.1.7 疲勞:駕駛無法以清醒狀態正確執行駕駛任務。	車輛的主要任務。 (3) 駕駛能力影響:駕駛受酒精或毒品影響。 (4) 突發疾病:係指因突然及無法預測的疾病，致使駕駛無法執行駕駛任務。

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- **Drowsy** – State of the driver where tiredness has an adverse effect of the driver's ability to focus on the driving task. - **Microsleep** – A microsleep is a temporary episode of sleep which may last up to several seconds. - **Sleep** – In this assessment sleep is considered as when a driver has been in a state of unconsciousness due to fatigue for a period of greater than a few seconds.		(1) 嗜睡:駕駛之疲勞狀態會對駕駛專注於行駛任務之能力產生不利影響。 (2) 微睡眠:微睡眠是一種暫時的睡眠，可能持續幾秒鐘。 (3) 睡眠:在此評等中，睡眠係指駕駛因疲勞而處於昏迷狀態超過幾秒鐘之狀態。	
Unresponsive Driver – Where a driver becomes unresponsive during driving, likely due to an onset of sudden sickness or extreme fatigue.		2.4.1.1.8 駕駛無反應:駕駛在行駛過程中無反應，可能是因突發疾病或極度疲勞所致。	
Impaired driving vehicle response – Warning and/or adapted vehicle mode after an impaired driving has been detected - **Impaired driving warning** – Warning issued in case the system	**Impaired driving warnings and interventions** – Warning and/or adapted vehicle mode after an impaired driving has been detected - **Impaired driving warning** – Warning issued in case the system	2.4.1.1.9 駕駛能力減損之反應: 系統偵測到駕駛能力減損後的警示及/或自 適應車輛模式(Adapted vehicle mode)。 (1) 駕駛能力減損警示:若系統確定駕駛能力減損時，應發出警示。	2.4.1.1.4 駕駛能力減損之警示及介入: 系統偵測到駕駛能力減損後的警示及/或自 適應車輛模式(Adapted vehicle mode)。 (1) 駕駛能力減損警示:若系統確定駕駛能力減損時，應發出警示。

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determines an impaired driver - **High sensitivity mode** – A more sensitive and earlier warning and/or intervention of Safety Assist systems to compensate for the driver state - **Minimum Risk Manoeuvre** – Emergency manoeuvre where the vehicle will come to either a controlled stop or speed of <10km/h without input from the driver. **Owl type movement** – A shifting of visual attention away from the road and forward-facing position that is primarily achieved by head rotation followed by the eyes. **Lizard type movement** – A movement in which the driver focuses on a task by moving primarily their eyeline away from the road with their head/face remaining in the forward-facing position.	determines an impaired driver - **High sensitivity mode** – A more sensitive and earlier warning and/or intervention of Safety Assist systems to compensate for the driver state - **Reduced speed mode** – Vehicle state where the speed is limited and high system sensitivity - **Emergency Stop Manoeuvre** – Emergency manoeuvre where the vehicle will come to a controlled stop	(2) 高靈敏度模式:高靈敏及提早警示及/或介入安全輔助系統，以彌補駕駛狀態。 (3) 最低風險操作:在駕駛無介入之情況下，緊急操作車輛受控停止或速度小於 10 公里/小時。 2.4.1.1.10 貓頭鷹式動作: 一種視覺注意力轉移動作，主要透過頭部轉動並伴隨視線移動，使其偏離前方道路視野。 2.4.1.1.11 蜥蜴式動作:駕駛主要將視線從道路移開，同時頭/臉保持面向前方的位置來專注於任務的動作。	(2) 高靈敏度模式:高靈敏及提早警示及/或介入安全輔助系統，以彌補駕駛狀態。 (3) 車速降低模式:限制車速及高系統靈敏度之車輛狀態。 (4) 緊急停止操作:緊急機動將車輛控制停止。

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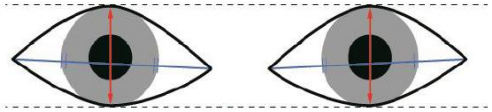
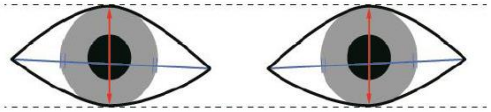
Degraded system – A direct driver monitoring system is considered degraded in this assessment when an entire subsystem becomes fully unavailable. E.g. A direct driver monitoring system which uses head pose tracking and eye tracking would be considered degraded if eye tracking became fully unavailable therefore preventing the system identifying any lizard type movements. **Eye lid aperture** – Distance between the point where the straight line drawn in the y-axis direction from the midpoint of line segment connecting the outer and inner corners of the driver's eye overlaps the lower edge of the upper eyelid and upper edge of the lower eyelid. Measured when driver is awake and attentive. 		2.4.1.1.12 系統降級:在此評等中，當整個子系統完全無法使用時，將視為直接駕駛監測系統降級。例如，若一個使用頭部姿勢追蹤及眼動追蹤之直接駕駛監測系統，則眼動追蹤完全無法使用時，導致系統無法辨識任何類似蜥蜴式動作之視線移動，該系統將被視為降級。 2.4.1.1.13 眼瞼孔徑: 當駕駛清醒及專心時，從直線沿著連接駕駛眼睛外角及內角之線段的中點向 y 軸方向畫出，與上眼瞼之下緣及下眼瞼之上緣重疊的點之間的距離進行量測。 	

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In-vehicle infotainment (IVI) system - The area containing the infotainment system and/or vehicle controls, typically located centrally ahead of the front row seating in the conventional passenger car layout.		2.4.1.1.14 車用資訊娛樂 (IVI) 系統: 包含資訊娛樂系統及/或車輛控制裝置的區域，通常位於傳統客車設計中第一排座椅前方之中央。	
3.3 Prerequisites In order to be rewarded any points in each of the individual assessment areas of this protocol, SBR, DSM and SAS systems must be fitted as standard equipment to the model tested as defined in the Euro NCAP Vehicle Specification, Sponsorship Testing and Re-testing Protocol.	**3.3 Preconditions**	2.4.1.2 前提條件 為在該規章之各個獨立評等領域中獲得分數，安全帶提醒裝置、駕駛狀態監測系統及車速輔助系統應作為標準配備安裝到 TNCAP 車型挑選提名、自費申請評等、車輛規格及試驗管理規章中所定義之受評車型上。	2.4.1.2 前提條件
To be eligible for scoring points in DSM: •All seating positions must have met the SBR requirements detailed in Section 3.4. However, the fitment of rear seat occupancy detection and compliance with Section 3.4.3.2.3 is NOT a prerequisite for scoring in	To be eligible for scoring points in DSM, the SBR requirements in section 3.4 must be met: - Front seats including occupant detection - If applicable, at least one rear seats with unbuckling and/or occupant detection	駕駛狀態監測系統之得分: (1) 全部座椅位置皆須符合 2.4.1.3 節中詳述安全帶提醒裝置之規定。然而，後排乘員偵測系統安裝及符合 2.4.1.3.3.2.3 節並非駕駛狀態監測系統得分之前提條件。	駕駛狀態監測系統之得分，應符合 2.4.1.3 安全帶提醒裝置評等之要求: (1) 第一排座椅，包含乘員偵測功能。 (2) 應至少一後排座椅設有解除安全帶及/或乘員偵測功能(若適用)

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DSM. •The vehicle under assessment must be equipped with an AEB system (meeting the Euro NCAP C2C and VRU preconditions as a minimum) and an LSS.	Only when the vehicle under assessment is equipped with an AEB, LSS and/or SAS system, points can be scored for DSM.	(2) 評等之車輛須配備有緊急煞車輔助系統(至少符合 TNCAP 車對車及弱勢道路使用者之前提條件)及車道輔助系統。	僅當評等之車輛配備有緊急煞車輔助系統、車道輔助系統及/或車速輔助系統時，駕駛狀態監測系統才能獲得分數。
3.4 Seat belt reminder assessment All seating positions in the vehicle will be assessed including optional and removable seats. All front row seating positions must meet the assessment criteria of Section 3.4.1 and 3.4.2 as a prerequisite of scoring. All rear seating positions must be equipped with SBR and meet the assessment criteria of Section 3.4.1 and 3.4.3. Only those rear seating positions equipped with occupant detection that are also compliant with Section 3.4.3.2.3 will be eligible for SBR scoring.	**3.4 Seat belt reminder assessment** 3.4.1 General requirements All seating positions in the vehicle will be assessed including optional and removable seats. …	2.4.1.3 安全帶提醒裝置評等 評等車輛中的所有座椅位置，包括可選配及可拆卸之座椅。 全部第一排座椅須符合 2.4.1.3.1 節及 2.4.1.3.2 節之評等標準，作為得分的前提條件。 全部後排座椅須配備安全帶提醒裝置並符合 2.4.1.3.1 節及 2.4.1.3.3 節之評等標準。僅有配備乘員偵測系統並符合 2.4.1.3.3.2.3 節的後排座椅才有資格獲得安全帶提醒裝置分數。	2.4.1.3 安全帶提醒裝置評等 2.4.1.3.1 一般規定 評等車輛中的所有座椅位置，包括可選配及可拆卸之座椅。 …

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3.4.1 General requirements … 3.4.1.3 Occupant detection In the case of the driver's seat, occupancy can be assumed so the system does not have to be capable of detecting whether or not the seat is in use. For all front seat passengers, seat use must be detected. For all rear seat passengers, only those equipped with occupant detection that are also compliant with Section 3.4.3.2.3 will be eligible for SBR scoring. Euro NCAP defines occupancy as use by an occupant larger, taller or heavier than a small female (5th percentile). …	3.4.1.3 Occupant detection In the case of the driver's seat, occupancy can be assumed so the system does not have to be capable of detecting whether or not the seat is in use. For the front seat passengers, seat use must be detected. Systems that feature rear seat occupant detection are eligible for higher scores. Euro NCAP defines occupancy as use by an occupant larger, taller or heavier than a small female (5th percentile). …	2.4.1.3.1一般規定 … 2.4.1.3.1.3 乘員偵測 安全帶提醒裝置應預設駕駛座為乘用狀態，無需偵測駕駛座是否有乘員。安全帶提醒裝置應偵測所有第一排是否有乘客，座椅乘用定義中，對於所有後排座椅，僅有配備乘員偵測且符合 2.4.1.3.3.2.3 節才有資格獲得安全帶提醒裝置分數，乘用之乘員體型、身高、體重應大於體型嬌小之女性(百分之5成年女性人偶)。 …	2.4.1.3.1.3 乘員偵測 安全帶提醒裝置應預設駕駛座為乘用狀態，無需偵測駕駛座是否有乘員。安全帶提醒裝置應偵測第一排是否有乘客，座椅乘用定義中，具有後排乘員偵測功能之系統有資格獲得更高的得分，乘用之乘員體型、身高、體重應大於體型嬌小之女性(百分之5成年女性人偶)。 …
3.5 Driver State Monitoring For the evaluation of Driver State Monitoring systems (DMS), Euro NCAP requires a dossier from the OEM containing a detailed technical assessment.	**3.5 Driver Monitoring Systems** For the evaluation of Driver Monitoring Systems, a simplified Euro NCAP Advanced approach will be used for 2020. This means that the manufacturer must provide a dossier containing a detailed technical	2.4.1.4 駕駛狀態監測系統 對於駕駛狀態監測系統(DSM)之評等，TNCAP 執行機構需車輛業者提供詳細技術評等資料。	2.4.1.4 駕駛狀態監測系統 對於駕駛狀態監測系統之評等，其應提供詳細技術評等資料。

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	assessment as per Euro NCAP Advanced protocol.		
The dossier should contain: - Sensing, providing evidence that the sensing system is capable of sensing a wide variety of different drivers and that is able to operate in a wide range of circumstances. - Driver state, demonstrating which elements of Distraction, Drowsiness and Unresponsive Driver can be identified by the system. - Vehicle response, detailing the vehicle response to a certain driver state. To be eligible to score points the OEM must demonstrate by means of a dossier that they meet the general requirements set out in 3.5.1 and the noise variable requirements (direct monitoring systems only) set out in 3.5.2. To score points the OEM must	The dossier should contain: - Technical detail about the system, to fully understand its functionality, relevant components, and intended availability. - Test procedures, criteria and limits by which the performance of the system was verified - If available, the dossier should summarize the findings from real-world or simulated real-world evaluations.	檢附資料應包含： (1) 感測:提供證明感測系統具備能夠感測各種不同駕駛並在廣泛情境下操作的能力。 (2) 駕駛狀態:顯示系統可識別分心、嗜睡及駕駛無反應之因素。 (3) 車輛反應:詳細說明車輛對特定駕駛狀態之反應。 車輛業者為有資格獲得分數須透過資料佐證其符合 2.4.1.4.1 節中規定之一般需求及 2.4.1.4.2 中規定之噪音變數需求（僅限直接監測系統）。 車輛業者為獲得分數，須透過資料佐	檢附資料應包含： (1) 系統的詳細技術資訊，包含能充分了解其功能、所涉相關元件及預期用途。 (2) 系統性能驗證之試驗程序、相關標準及限制等。 (3) 資料內容應能總結從實際運作(Real-world)或模擬運作評估之結果(若適用)。

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demonstrate by means of a dossier that they meet both the detection requirements set out in 3.5.3 and the related response requirements set out in 3.5.4. The breakdown of points available is set out in 3.6. Euro NCAP test labs will conduct (spot) testing to validate the data supplied in the dossier. In addition, the OEM must provide a separate dossier for the test laboratory reference, which shall be based on the main dossier but must not include confidential information e.g., system KPI figures, test subject pictures, etc.		證其符合 2.4.1.4.3 節中規定之檢測需求及 2.4.1.4.4 節中規定之相關回應需求。在 2.4.1.5 節中列出可獲得分數之詳細說明。 TNCAP 檢測機構將進行（現場）測試以驗證資料中提供之數據。 此外，車輛業者須提供個別資料供檢測機構參考，該資料應以主檔案為基礎，但不得包含機密資訊，例如:系統 KPI 數據、試驗對象圖示等。	
3.5.1 General requirements To be eligible for scoring points in DSM, the system needs to be default ON at the start of every journey and deactivation of the system should not be possible with a momentary single push on a button.	3.5.1 General requirements To be eligible for scoring points in DSM, the system needs to be default ON at the start of every journey and deactivation of the system should not be possible with a momentary single push on a button.	2.4.1.4.1 一般需求 駕駛狀態監測系統評等之得分，系統每次啟動車輛時，預設狀態應為「開啟」，系統:不得僅按一鍵即關閉。	2.4.1.4.1 一般需求 駕駛狀態監測系統評等之得分，系統每次啟動車輛時，預設狀態應為「開啟」，系統:不得僅按一鍵即關閉。

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Direct monitoring systems must be active at all times when the vehicle is in forward motion at speeds ≥10km/h. A cumulative period of up to 1 minute of driving at speeds ≥10km/h is permitted for the system to begin measuring the driver state, this is acceptable providing it is detailed in the OEM provided dossier. For fatigue-related driving behaviour, a learning period of up to 30 minutes is permitted from the start of every journey (see 3.5.3.2)		當車輛前進速度大於等於 10 km/h 時，直接監測系統須全程處於啟動狀態。允許車輛以大於等於 10 km/h 速度行駛之累積時間長達 1 分鐘，以便系統開始測量駕駛狀態，該點在車輛業者提供之資料中有詳細說明即可接受。針對疲勞相關之駕駛行為，從每次旅程開始，允許學習期長達 30 分鐘（參 2.4.1.4.3.2 節）。	
Indirect monitoring systems must be active when the vehicle is in forward motion at speeds ≥65km/h.		當車輛以大於等於 65km/h 的速度向前行駛時，間接監測系統須處於啟動狀態。	
3.5.2 Noise Variables 3.5.2.1 Drivers A sensing system which is robust and covers a wide variety of the driver population will be eligible for scoring points. Covering the full range of each driver variable detailed here is a		2.4.1.4.2 干擾變數 2.4.1.4.2.1 駕駛 具備健全且覆蓋廣泛駕駛族群之感測系統將有資格獲得分數。在駕駛狀態監測系統評等中獲得分數之前提條件係覆蓋此處每項駕駛變數完整範圍之詳細說明。車輛業者需透過文件佐證，	

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prerequisite to scoring points in the DSM assessment. The OEM needs to demonstrate, by means of a dossier, that the sensing system was verified using a population covering at least the following ranges and elements: - Age Youthful (16-18) – aged (≥80) - Sex All - Stature AF05 – AM95 - Skin Complexion Fitzpatrick Skin Type (1 - 6) - Eye lid aperture[1] From 6.0mm up to 14.0mm [1] Comparative Evaluation of Asian and White Ocular Topography, Hickson-Curran et al, 2014. It is acknowledged that system performance may be affected by some combinations of noise variables. The OEM must demonstrate that system performance does not deviate strongly with different noise variables e.g. gender, age, ethnicity etc. The OEM's supporting evidence may be generated		該感測系統已使用涵蓋至少以下範圍及因素之族群進行驗證： (1) 青少年(16 至 18 歲)，老年(大於等於 80 歲) (2) 全部性別 (3) 身型 AF05 至 AM95 (4) 菲茨派屈克(Fitzpatrick)膚色類型(1 至 6) (5) 眼瞼孔徑[1]:從 6.0mm 至 14.0mm 附註 1：2014 年亞洲人與白人眼部地形的比較評估，Hickson-Curran 等人。 某些干擾變數之組合可能會影響系統性能。車輛業者須佐證，其系統性能在不同之干擾變數（例如:性別、年齡及種族等）下不會出現明顯偏差。車輛業者之支持佐證可透過對不同干擾變數整合進行抽樣來產生。	

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by sampling different noise variable combinations. 3.5.2.2 Occlusion There are a number of variables seen in real world driving that may occlude the driver's facial features from the DSM system. A robust system must not be degraded by the most common occlusion variables. Covering the full range of each occlusion variable detailed here is a prerequisite to scoring points in the DSM assessment. The OEM must demonstrate, by means of a dossier, that the DSM system performance in not degraded in the following ranges and elements: - Lighting Daytime (100,000 lux) – night-time (1 lux) when measured outside the vehicle, using the method stated in Annex B.7 of AEB VRU systems test protocol. - Eyewear Clear sunglasses with >70% transmittance* including those with thick rims.		2.4.1.4.2.2 遮擋 在實際道路行駛過程中，有許多變數可能會遮擋駕駛狀態監測系統對駕駛臉部特徵之辨識。一個健全之系統不應被最常見之遮擋變數所降級。在駕駛狀態監測系統評等中獲得分數之前提條件，係為覆蓋此處每個遮擋變數完整範圍之詳細說明。車輛業者須透過文件佐證，其駕駛狀態監測系統性能在以下範圍及因素中未被降級： (1) 照明條件：白天（100,000 lux）至晚上（1 lux），依緊急煞車輔助系統(弱勢道路使用者)試驗規章附件 3.11.8.7 中所述方法在車外進行測量。 (2) 眼鏡: 透光率*大於 70%之透明太陽眼鏡，包括配有厚框者。 (3) 臉部毛髮:臉部短毛(長度小於	

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-Facial hair Short facial hair (<20mm in length) ** Referred to light in the wavelength operated by the camera (Transmittance of sunglasses should correlate to the light used by the sensor).* There are a number of variables that may occlude a driver's face which may prevent a suitably robust system from maintaining a consistent level of performance. A robust system should be able to recognise when its performance is degraded. The OEM must demonstrate, by means of a dossier, that when faced with the following ranges and elements the DSM system is either not degraded in performance or that performance is degraded and the driver is informed within 10s of the occlusion being present with visual and/or audible information. It is sufficient for the information on performance		20mm)。 *附註*:透光率係指攝影機工作波段內之光線(太陽眼鏡之透光率應與感測器使用之光源相對應)。* 存在多種可能遮擋駕駛臉部之變數，可能導致適當健全之系統無法保持一致之性能表現。一個健全系統應能辨識其性能降級之能力。車輛業者須通過資料佐證，當面對以下範圍及因素時，駕駛狀態監測系統之性能未降級，或性能降級並在出現遮擋時 10 秒內以視覺及/或聽覺資訊警示駕駛。有關性能降級之資訊在每個旅程中出現一次即可。	

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degradation to appear once per journey. - Hand on wheel One hand on wheel at 12 o'clock position - Facial occlusion eyes Face-mask, hats, long head hair fringe obscuring - Eyewear Sunglasses with a <15% transmittance* - Eyelash makeup Thick eyelash makeup - Facial hair Long facial hair (>150mm in length) ** Referred to light in the wavelength operated by the camera (Transmittance of sunglasses should correlate to the light used by the sensor).* 3.5.2.3 Driver behaviours There are a number of common driver behaviours that have the potential to affect the performance of the DSM system. The OEM must demonstrate, by means of a dossier, if and how the DSM system performance is affected by the following driver behaviours.		(1) 手握方向盤：單手握在方向盤 12 點鐘位置上。 (2) 臉部遮擋(眼部區域)：如口罩、帽子、長瀏海遮擋。 (3) 眼鏡：透光率小於 15%*之太陽眼鏡。 (4) 眼睫毛化妝：濃密之眼睫毛妝。 (5) 臉部毛髮：臉部長毛(長度大於 150mm)。 *附註*:透光率係指攝影機工作波段內之光線（太陽眼鏡之透光率應與感測器使用之光源相對應）。* 2.4.1.4.2.3 駕駛行為 有多種常見駕駛行為可能影響駕駛狀態監測系統之性能。車輛業者須透過資料佐證，其駕駛狀態監測系統之性能是否受以下駕駛行為之影響，以及如何受影響。此項不涉及性能要求。 (1) 吃。	

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There is no performance requirement. - Eating - Talking - Laughing - Singing - Smoking / Vaping - Eye scratching / rubbing - Sneezing		(2) 談話。 (3) 笑。 (4) 唱歌。 (5) 抽菸/電子菸。 (6) 搔抓眼睛/揉眼睛。 (7) 打噴嚏。	
3.5.3 Detection of Driver State	3.5.2 Detection of Driver State This section is foreseen for 2023 implementation and will be developed by the Euro NCAP WG on OSM 3.5.3 System Warning and/or Intervention This section is foreseen for 2023 implementation and will be developed by the Euro NCAP WG on OSM	2.4.1.4.3 駕駛狀態之偵測	

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When the general requirements are met, the system is eligible for scoring points in Distraction, Fatigue and Unresponsive Driver. 3.5.3.1 Distraction Where applicable, Owl (head movement), Lizard (eye movement) and body lean looking behaviours are used to assess detection of driver distraction in three main areas: - Long Distraction o Away from forward road, non-driving task o Driving task - Short Multiple Distractions (VATS) o Away from forward road, non-driving task o Driving task o Away from road (multiple locations) - Phone Usage o Phone Use Detection – Basic (Phone not within driver's view of windscreen)		當符合一般需求時，系統就有資格在分心、疲勞及駕駛無反應中獲得分數。 2.4.1.4.3.1 分心 若適用，使用貓頭鷹（頭部運動）、蜥蜴（眼睛運動）及身體傾斜之行為來評估對駕駛分心之檢測，主要涵蓋以下三個面向： (1) 長期分心 (A) 遠離前方道路，非駕駛任務。 (B) 駕駛任務。 (2) 短期多重干擾(VATS) (A) 遠離前方道路，非駕駛任務。 (B) 駕駛任務。 (C) 遠離道路（多個地點）。 (3) 手機使用 (A) 手機使用偵測:基本（手機不在駕駛的擋風玻璃視野範圍內）。 (B) 手機使用偵測:進階（手機在駕駛的擋風玻璃視野範	

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o Phone Use Detection – Advanced (Phone within driver's view of windscreen) 3.5.3.1.1 Driver Gaze locations The OEM must demonstrate, by means of a dossier, that the driver is classified as distracted in the following combinations of distraction scenario, movement type and gaze location. For Long Distraction and Short Distraction (VATS), PASS / FAIL is assessed per movement type; all gaze locations listed per movement type must be covered to be awarded a PASS. For Phone use, PASS / FAIL is assessed per distraction scenario; all movement types and gaze locations listed per distraction scenario must be covered to be awarded a PASS.		圍內)。 2.4.1.4.3.1.1 駕駛注視位置 車輛業者須透過資料佐證，駕駛在以下的分心情境、移動類型及注視位置整合中，被歸類為分心。 針對長期分心與短期分心(VATS)，依移動類型進行評等通過/未通過，每個移動類型所列出之所有注視位置皆須被覆蓋才可通過。 針對手機使用，依分心情境評等通過/未通過；每個分心情境列出之所有運動類型及注視位置皆須被覆蓋才可通過。 (請參末頁表格)	

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Distraction Type	Distraction Scenario	Movement Type	Gaze Location	Vehicle Response
Long Distraction	Away from forward road / non-driving task	Owl	Driver side window	Warning and Intervention
			Passenger side window	
			Passenger footwell	
			Passenger face	
			In-vehicle infotainment system	
		Lizard	In-vehicle infotainment system	
			Glovebox	
		Body Lean	Passenger footwell	
			Rear passenger	
	Driving Task	Owl	Rear view mirror	Warning and Intervention OR Intervention only
			Passenger side mirror	
			Driver side mirror	
		Lizard	Instrument Cluster	
			Driver side mirror	
			Rear view mirror	
Short Distraction (VATS)	Away from forward road / non-driving task	Owl	In-vehicle infotainment system	Warning and Intervention
			Passenger side window	
			Passenger footwell	
		Lizard	Driver side window	Warning and Intervention OR Intervention only
			Passenger footwell	
			In-vehicle infotainment system	
	Driving Task	Owl	Rear view mirror	
			Passenger side mirror	
			Driver side mirror	
		Lizard	Instrument Cluster	
			Driver side mirror	
			Rear view mirror	
	Away from road (multi-location)	Lizard	Any combination of non-driving task locations	Warning and Intervention
Phone use	Phone Use Detection - Basic	Owl	Driver knee driver side	Warning and Intervention
			Driver knee passenger side	
			Driver lap	
			Phone mounted on dashboard driver side	
			Phone in OEM designed charge port or dedicated phone holding position	
		Lizard	Driver knee driver side	
			Driver knee passenger side	
			Driver lap	
			Phone held centre of steering wheel (below cluster view)	
			Phone in OEM designed charge port or dedicated phone holding position	
			Phone mounted on dashboard driver side	
			Phone held in 9-11 or 13-15 o'clock region on wheel (uppermost position below windscreen view and outside of cluster view)	Warning and Intervention OR Intervention only
	Phone Use Detection - Advanced	Lizard	Phone held in view of windscreen	
			Phone held in view of instrument cluster	
			Phone mounted in forward view of windscreen	

3.5.3.1.2 Long Distraction

A long distraction is considered a single long duration driver gaze away from the forward road to one consistent location of ≥3 seconds. Euro NCAP understands that dangerous situations can occur both within this 3 second period as well as after this time. Therefore:

•The detection requirements for

2.4.1.4.3.1.2 長期分心

長期分心係指駕駛將視線從前方道路轉移至一個固定位置，並持續注視該位置之單一時間大於等於 3 秒。TNCAP 執行機構認知危險情況可能會在這 3 秒內以及之後發生。因此：

(1) 依 2.4.1.4.4 節說明，發出警示之偵測規定為任一次從前方道路

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issuing a warning as detailed in 3.5.4 are any single gaze away from forward road view to one consistent location of ≥ 3s (+1 second with compelling evidence for implementation) – as per following diagram:  Where: T_0 Start of test (T_{away} – 4.0s or T_{close} – 4.0s) T_{away} Time of first eye movement looking away from forward road view T_{gaze} Time of glance first landing on gaze location T_{warn} Time of first instance of audio/visual warning •The detection requirements for vehicle response vary depending on the response action of the vehicle and are listed alongside the vehicle response in 3.5.4.1. The detection requirement can be as low as gazes away of ≥1 second.		視野移至一個固定位置之單一注視，持續時間大於等於 3 秒（提供具說服力之實施佐證，允許增加 1 秒）- 如下圖所示：(請參末頁圖示) 定義如下: T_0：試驗開始(T_{away} -4 秒 or T_{close} -4 秒)。 T_{away}：首次眼球移動遠離前方道路視野之時間。 T_{gaze}：視線首次落在注視位置之時間。 T_{warn}：首次出現聽覺/視覺警示之時間。 (2) 車輛反應之偵測規定依車輛之反應動作而變化，並與 2.4.1.4.4.1 節中之車輛反應一併列出。其偵測規定最低可為視線離開大於等於 1 秒。	

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This must be implemented covering the driver gaze locations as set out for Long Distraction in 3.5.3.1.1. Gaze locations are considered to be the primary input in determining distraction. However, an OEM may use additional inputs to determine if the driver is truly distracted or if a gaze away from the forward road view is appropriate for the driving situation. These inputs should be detailed in the dossier.		須涵蓋 2.4.1.4.3.1.1 節中，針對長期分心所設定之駕駛注視位置，注視位置被視為確定分心之主要輸入。然而，車輛業者可使用額外之輸入來確定駕駛是否真正分心，或將視線從前方道路視野移開是否為該駕駛合理行為。這些輸入應在資料中詳細說明。	
3.5.3.1.3 Short Distraction (VATS) A short distraction (or visual attention time sharing) event is considered to be repeated glances away from the forward road view either repeated towards one location, or to multiple different locations. A short distraction event is a build-up of multiple glances away from the forward road view and is considered to end when the driver's attention returns to the forward road view for a period long enough for the		2.4.1.4.3.1.3 短期分心(VATS) 短期分心（或視覺注意力時間共享）事件被認為是反覆地將視線從前方道路視野移開，無論是反覆朝向一個位置，或是朝向多個不同的位置。短期分心事件是多次將視線從前方道路視野移開之累積，當駕駛注意力回到前方道路視野，並足夠長期以便駕駛充分理解道路情況時，該事件才以結束。	

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driver to fully interpret the road situation. An example of suitable requirements for a driver to be classified as distracted is when a driver glances away from the forward road view for a cumulative 10 seconds within a 30 second time period, where the time period is reset if the driver's glance returns to the forward road view for a period of ≥ 2 seconds. This must be implemented covering the driver gaze locations as set out for Short Distraction (VATS) in 3.5.3.1.1. The OEM must provide information, by means of a dossier, of the requirements of their system to classify a driver as distracted. Where the OEM's approach meets the requirements set out above, the system will be accepted. Where the OEM's approach differs from the requirements set out above, the OEM must provide		將駕駛歸類為分心之合適規定範例，當駕駛在 30 秒內從將視線從前方道路視野移開累積 10 秒時，若駕駛視線回到前方道路視野並持續時間大於等於 2 秒，則該時段將被重新計算。須依 2.4.1.4.3.1.1 節中針對短期分心（VATS）執行所設定涵蓋之駕駛注視位置。 車輛業者須透過資料之方式提供有關其系統將駕駛歸類為分心之規定條件資訊。若車輛業者之方法符合上述規定時，則系統將被接受。若車輛業者之方法不符合上述規定時，則車輛業者須提供有力之證據來佐證其方法之安全效益並合理解釋其方法之實施。車輛業者可針對駕駛相關及非駕駛相關任務實施不同之策略。	

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compelling evidence to demonstrate the safety benefits of and justify the implementation of their approach. It is permissible for the OEM to implement different strategies for driving related and non-driving related tasks. 3.5.3.1.4 Phone use Phone use is considered to be a specific type of short distraction (or visual attention time sharing) event where the driver's repeated gaze is towards their mobile phone. The detection requirements for phone use mirror those set out in 3.5.3.1.3, in combination with the gaze locations set out for phone use in 3.5.3.1.1. 3.5.3.2 Fatigue Fatigue is a typical behaviour that builds up over time. Euro NCAP rewards detection of and response to different stages of fatigue: - Drowsiness		2.4.1.4.3.1.4 手機使用 手機使用被視為一種特定類型的短期分心（或視覺注意力時間共享）事件，其中駕駛反覆注視手機。 手機使用之偵測規定反映在2.4.1.4.3.1.3 節，並整合 2.4.1.4.3.1.1 節中規定之手機使用注視位置。 2.4.1.4.3.2 疲勞 疲勞是一種隨著時間累積的典型行為。TNCAP 執行機構對不同階段疲勞之偵測與反應進行獎勵： (1) 嗜睡。 (2) 微睡眠。	

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- Microsleep - Sleep A maximum of 30 minutes from the beginning of the journey may be used to form a baseline of driver behaviour. 3.5.3.2.1 Drowsiness The OEM must provide information, by means of a dossier, demonstrating the requirements of their system to classify a driver as drowsy. The OEM must provide evidence that their system will classify a driver as drowsy when the driver reaches a KSS level >7 at the latest, or an equivalent measure. Both direct and indirect monitoring systems are rewarded for detection of drowsiness. From 2026, only direct (or a combination of direct and indirect) monitoring systems will be awarded.		(3) 睡眠。 從旅程開始起最多 30 分可作為駕駛行為之基準值。 2.4.1.4.3.2.1 嗜睡 車輛業者須透過資料之方式提供資訊，佐證其系統將駕駛歸類為嗜睡之規定。 車輛業者須提供佐證，當駕駛至少達到卡羅林斯卡嗜睡量表(KSS) 等級大於 7 或同等措施時，該系統會歸類為困倦駕駛。 直接與間接監測系統皆會因偵測到嗜睡而獲得分數。 ~~從 2026 年起，僅直接（或整合直接及間接）監測系統將獲得分數。~~(此條文無涉及第三版規章內容，故刪除)	

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3.5.3.2.2 Microsleep A common symptom of a microsleep is an eye closure of <3s although Euro NCAP recognises that non-eye closure microsleep events are possible. The OEM must provide information, by means of a dossier, demonstrating the requirements and ability of their system to detect microsleep events. An example of a suitable system is one able to detect a short duration eye closure (1-2 seconds) after a build-up of drowsiness has been seen in the driver. If the OEM's approach is unable to meet this requirement, the OEM must provide compelling evidence to justify their approach and demonstrate the safety benefits. 3.5.3.2.3 Sleep A driver is considered to be asleep in this assessment when displaying a continued eye closure >3 seconds.		2.4.1.4.3.2.2 微睡眠 微睡眠是閉眼時間小於3 秒之常見症狀，儘管 TNCAP 執行機構認知到非閉眼的微睡眠事件亦是可能的。 車輛業者須透過資料之方式提供資訊，佐證其系統偵測微睡眠事件之規定及性能。 適當之系統範例，能在駕駛出現嗜睡後偵測到短期的眼睛閉合(1 至 2 秒)。若車輛業者之方法未符合此規定，則車輛業者須提供有力之證據來佐證其方法之合理性及安全益處。 2.4.1.4.3.2.3 睡眠 在此評等中，若駕駛持續閉眼大於 3 秒，則視為處於睡眠狀態。	

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The OEM must provide information, by means of a dossier, to demonstrate the ability to detect a long eye closure event. If the OEM uses other inputs to determine a driver is asleep, this is permitted and these inputs should be detailed in the dossier.		車輛業者須透過資料之方式提供資訊，以佐證偵測長期閉眼事件之能力。若車輛業者使用其他輸入來確定駕駛是否睡著，這是允許的，並且這些輸入應在資料中詳細說明。	
3.5.3.3 Unresponsive driver Where a driver becomes unresponsive during driving, likely due to a sudden onset of sickness. It is likely, but not certain, that initially an unresponsive driver will be determined as either distracted or asleep.		2.4.1.4.3.3 駕駛無反應 駕駛在行駛過程中無反應，可能是因為突然生病。在初始階段未回應之駕駛可能被判定為分心或睡著，但並非確定性的。	
An unresponsive driver is determined as a driver who either does not return their gaze to the forward road view within 3 seconds of an inattention warning being issued or a driver whose gaze has been away from the forward road view or has been eyes closed for ≥ 6 seconds.		駕駛在注意力不集中之警示發出後 3 秒內未將視線返回前方道路視野，或視線離開前方道路視野或閉眼時間大於等於 6 秒之駕駛被判定為無反應。	

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If an OEM uses more advanced systems using different/ additional inputs to determine the driver is unresponsive, this is permitted and these inputs should be detailed in the dossier. 3.5.4 Vehicle Response Requirements When the system is able to detect certain Driver State(s) specified in 3.5.3, a vehicle response in terms of warning and/or intervention is required. For each inattention category, intervention requirements are listed including a list of suitable intervention strategies. Specifically for Distraction, the OEM may choose one of the following vehicle response strategies for some of the gaze locations as per 3.5.3.1.1: a)Warning and intervention OR b)Intervention only		若車輛業者使用更先進之系統，使用不同/額外的輸入來確定駕駛未回應，這是允許的，並且這些輸入應在資料中詳細說明。 2.4.1.4.4 車輛回應規定 當系統能偵測到 2.4.1.4.3 節所定義之特定駕駛狀態時，車輛需在警示及/或介入方面做出回應。 對於每一種注意力不集中之類型，均列出了所規定之介入要求，並包含適用的介入策略清單。 針對注意力分散情形，車輛業者可依據第 2.4.1.4.3.1.1 節，針對部分視線位置選擇以下其中一種車輛反應策略： (1)警示及介入 或 (2)僅介入	

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Where the requirements state "any other intervention that the OEM considers to be appropriate", the OEM must provide information, by means of a dossier, detailing their intervention strategy and provide compelling evidence of the safety benefits of their implementation. These will be rewarded subject to review by Euro NCAP.		若規定中提到車輛業者認為適當的任何其他介入時，則車輛業者須透過資料之方式提供詳細的介入策略資訊，並透過資料提供有力證據，以佐證其執行的安全益處。將依 TNCAP 執行機構之審查項目獲得分數。	
3.5.4.1 Distraction 3.5.4.1.1 Long Distraction Warning Requirements: - When the vehicle is travelling at ≥ 20km/h, a visual + (haptic and/or audible) warning must be issued immediately after the driver is classified as distracted, as per the OEM information provided to satisfy 3.5.3.1.2.		2.4.1.4.4.1 分心 2.4.1.4.4.1.1 長期分心 警示規定: (1) 當車輛以大於等於 20km/h 行駛時，為符合 2.4.1.4.3.1.2 節提供的車輛業者資訊，在駕駛被分類為分心後，須立即發出視覺加（觸覺及/或聽覺）警示。	
Intervention Requirements: - High sensitivity FCW setting, to be activated ≤ 1 second of continuous gaze		介入規定: (1) 高靈敏度之 FCW 設置，視線持續離開前方道路視野小於等於 1	

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away from forward road view, until driver attention is restored. Further details for high sensitivity FCW are set out in 3.5.4.4. or - Low level braking intervention, where low level braking begins immediately after the driver is classified as distracted, as per the OEM information provided to satisfy 3.5.3.1.2, and continuous until driver attention is restored. or - Any other intervention that the OEM considers to be appropriate. 3.5.4.1.2 Short Distraction (VATS) Warning Requirements: - When the vehicle is travelling at ≥ 20km/h, a visual + (haptic and/or audible) warning must be issued immediately after the driver is classified as distracted, as per the OEM information provided to satisfy 3.5.3.1.3.		秒時即可啟動，直到駕駛注意力恢復。高靈敏度之 FCW 的更多細節在 2.4.1.4.4.4 節中列出。 或 (2) 低強度煞車介入係指為符合 2.4.1.4.3.1.2 節提供之車輛業者資訊，在駕駛被分類為分心後立即開始低強度煞車，並持續直至駕駛注意力恢復。 或 (3) 車輛業者認為適當的任何其他介入。 2.4.1.4.4.1.2 短期分心(VATS) 警示規定: (1) 當車輛以大於等於 20km/h 行駛時，為符合 2.4.1.4.3.1.3 節提供的車輛業者資訊，在駕駛被分類為分心後，須立即發出視覺加（觸覺及/或聽覺）警示。	

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Intervention Requirements: - High sensitivity FCW setting, to be activated immediately after driver is classified as distracted, as per the OEM information provided to satisfy 3.5.3.1.3, until driver attention is restored. Further details for high sensitivity FCW are set out in 3.5.4.4. or - Low level braking intervention, where low level braking begins immediately after driver is classified as distracted, as per the OEM information provided to satisfy 3.5.3.1.3, until driver attention is restored. or - Any other intervention that the OEM considers to be appropriate.		介入規定: (1) 高靈敏度之 FCW 設置，為符合 2.4.1.4.3.1.3 提供的車輛業者資訊，在駕駛被分類為分心後立即啟動，直到駕駛注意力恢復。高靈敏度之 FCW 的更多細節在 2.4.1.4.4.4 節中列出。 或 (2) 低強度煞車介入係指為符合 2.4.1.4.3.1.3 節提供之車輛業者資訊，在駕駛被分類為分心後立即開始低強度煞車，並持續直至駕駛注意力恢復。 或 (3) 車輛業者認為適當的任何其他介入。	
3.5.4.1.3 Phone Usage Warning Requirements: - When the vehicle is travelling at ≥ 20km/h, a visual + (haptic and/or audible) warning must be issued immediately after driver is classified as		2.4.1.4.4.1.3 手機使用 警示規定: (1) 當車輛以大於等於 20km/h 行駛時，為符合 2.4.1.4.3.1.4 節提供的車輛業者資訊，在駕駛被分類為分心後，須立即發出視覺加	

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distracted, as per the OEM information provided to satisfy 3.5.3.1.4. Intervention Requirements: - High sensitivity FCW setting, to be activated immediately after driver is classified as distracted, as per the OEM information provided to satisfy 3.5.3.1.4, until driver attention is restored. Further details for high sensitivity FCW are set out in 3.5.4.4. or - Low level braking intervention, where low level braking begins after immediately after driver is classified as distracted, as per the OEM information provided to satisfy 3.5.3.1.4, until driver attention is restored. or - Any other intervention that the OEM considers to be appropriate. 3.5.4.2 Fatigue 3.5.4.2.1 Drowsiness Warning Requirements:		（觸覺及/或聽覺）警示。 介入規定: (1) 高靈敏度之 FCW 設置，為符合 2.4.1.4.3.1.4 提供的車輛業者資訊，在駕駛被分類為分心後立即啟動，直到駕駛注意力恢復。高靈敏度之 FCW 的更多細節在 2.4.1.4.4.4 中列出。 或 (2) 低強度煞車介入係指為符合 2.4.1.4.3.1.4 節提供之車輛業者資訊，在駕駛被分類為分心後立即開始低強度煞車，並持續直至駕駛注意力恢復。 或 (3) 車輛業者認為適當的任何其他介入。 2.4.1.4.4.2 疲勞 2.4.1.4.4.2.1 嗜睡 警示規定:	

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- A visual + (haptic and/or audible) warning must be issued immediately after driver is classified as drowsy, as per the OEM information provided to satisfy 3.5.3.2.1. Intervention Requirements: - High sensitivity FCW and LDW setting, to be activated immediately after driver is classified as drowsy, as per the OEM information provided to satisfy 3.5.3.2.1, for the remainder of the journey. Further details for high sensitivity FCW and LDW are set out in 3.5.4.4. or - Any other intervention that the OEM considers to be appropriate. 3.5.4.2.2 Microsleep Warning Requirements: - A visual + (haptic and/or audible) warning must be issued immediately after a microsleep is detected, as per the OEM information provided to satisfy		(1) 為符合 2.4.1.4.3.2.1 節提供的車輛業者資訊，在駕駛被分類為嗜睡後，須立即發出視覺加（觸覺及/或聽覺）警示。 介入規定: (1) 高靈敏度之 FCW 及 LDW 設置，為符合 2.4.1.4.3.2.1 提供的車輛業者資訊，在駕駛被分類為嗜睡後立即啟動，以完成剩餘的旅程。高靈敏度之 FCW 及 LDW 的更多細節在 2.4.1.4.4.4 中列出。 或 (2) 車輛業者認為適當的任何其他介入。 2.4.1.4.4.2.2 微睡眠 警示規定: (1) 為符合 2.4.1.4.3.2.2 節提供的車輛業者資訊，在偵測到微睡眠後須立即發出視覺加（觸覺及/或聽覺）警示。	

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3.5.3.2.2. Intervention Requirements: - High sensitivity FCW and LDW setting, to be activated immediately after a microsleep is detected, as per the OEM information provided to satisfy 3.5.3.2.2, for the remainder of the journey. Further details for high sensitivity FCW and LDW are set out in 3.5.4.4. or - Any other intervention that the OEM considers to be appropriate.		介入規定: (1) 高靈敏度之 FCW 及 LDW 設置，為符合 2.4.1.4.3.2.2 提供的車輛業者資訊，在偵測到微睡眠後立即啟動，以完成剩餘的旅程。高靈敏度之 FCW 及 LDW 的更多細節在 2.4.1.4.4.4 中列出。 或 (2) 車輛業者認為適當的任何其他介入。	
3.5.4.2.3 Sleep Warning Requirements: - A visual + (haptic and/or audible) warning must be issued immediately after the driver is classified as asleep, as per the OEM information provided to satisfy 3.5.3.2.3. Intervention Requirements: - High sensitivity FCW and LDW		2.4.1.4.4.2.3 睡眠 警示規定: (1) 為符合 2.4.1.4.3.2.3 節提供的車輛業者資訊，在駕駛被分類為睡著後，須立即發出視覺加（觸覺及/或聽覺）警示。 介入規定: (1) 高靈敏度之 FCW 及 LDW 設置，	

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setting, to be activated immediately after the driver is classified as asleep, as per the OEM information provided to satisfy 3.5.3.2.3, for the remainder of the journey. Further details for high sensitivity FCW and LDW are set out in 3.5.4.4. or - Any other intervention that the OEM considers to be appropriate. 3.5.4.3 Unresponsive driver Intervention Requirements: - A minimum risk manoeuvre should be initiated, where the distinct warning phase begins <1 second after a driver is classified as unresponsive as per 3.5.3.3. 3.5.4.4 High Sensitivity FCW and LDW To ensure a safety benefit is realised by the implementation of a significantly more sensitive FCW when the driver is detected as inattentive, the OEM shall demonstrate an optimised (advanced)		為符合 2.4.1.4.3.2.3 節提供的車輛業者資訊，在駕駛被分類為睡著後立即啟動，以完成剩餘的旅程。高靈敏度之 FCW 及 LDW 的更多細節在 2.4.1.4.4.4 節中列出。 或 (2) 車輛業者認為適當的任何其他介入。 2.4.1.4.4.3 駕駛無反應 介入規定: (1) 當駕駛依 2.4.1.4.3.3 節被判定為無反應時，應啟動最低風險操作，且明確警示階段小於 1 秒開始。 2.4.1.4.4.4 高靈敏度之 FCW 及 LDW 為確保在偵測到駕駛注意力不集中時透過實施更顯著靈敏的 FCW 來實現安全效益，車輛業者應展示優化的（進階）警示時機。 如偵測到駕駛注意力集中警示可延遲。	

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warning timing. In cases where the driver is detected as attentive, warnings can be delayed. Where high sensitivity LDW is also required (Drowsiness and Microsleep); an LDW system must be activated and set in the most sensitive setting available. Noting that an LDW system is not required to be default on by Euro NCAP, so system activation may be required at this time. For this strategy to be rewarded, the LDW system must be capable of meeting the LDW requirements, as set out in the Euro NCAP SA – Crash Avoidance protocol once activated. Where the protocol states that the high sensitivity setting shall remain until the end of the journey, the FCW / LDW system must remain in the highest sensitivity setting until the next ignition cycle of the vehicle. Exceptions to this requirement are:		在需要高靈敏度 LDW 的情況下（嗜睡及微睡眠），須啟動 LDW 系統並設定為最靈敏之設置。請注意 TNCAP 執行機構並未要求 LDW 系統預設開啟，因此在此時可能需要啟動系統。為使這策略獲得分數，LDW 系統啟動後須能符合 TNCAP 安全輔助評等規章中之 LDW 規定。 若規章規定高靈敏度設定應保持到旅程結束，則 FCW / LDW 系統須保持最高靈敏度設置，直到車輛的下一個點火循環。 該規定之例外情況是：	

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- If the driver state monitoring system continues to measure the driver's state and determines the driver's attentiveness has been restored. - It is permissible for the driver to override the system and return the FCW / LDW systems to a reduced sensitivity level.		(1) 如駕駛狀態監測系統持續測量駕駛之狀態並確認駕駛之專注力已恢復。 (2) 同意駕駛可凌駕於系統，並調整 FCW/ LDW 系統之靈敏度為較低等級。	
3.6 Scoring & Visualisation A maximum of 3.0 points can be scored for Occupant Status Monitoring in 2023: - Up to 1.0 point for SBR - Up to 2.0 points for DSM	**3.6 Scoring & Visualisation** A maximum of 3.0 points can be scored for Occupant Status Monitoring in 2020: - 1.0 point for DSM - 2.0 points for SBR on rear seating positions In 2023 the point distribution between SBR and DSM will change. For 2023, 2.0 points will be awarded for DSM and 1.0 point for SBR (Occupant Detection on Rear seats only). 3.6.1 Driver State Monitoring The Euro NCAP Secretariat will review the DSM dossier as provided by	2.4.1.5 得分與視覺呈現 乘員狀態監測系統最多可獲得 3 分： (1) 安全帶提醒裝置最高 1 分 (2) 駕駛狀態監測系統最高 2 分	2.4.1.5 得分與視覺呈現 乘員狀態監測系統最多可獲得 3 分： (1) 駕駛狀態監測系統 1 分 (2) 安全帶提醒裝置在後排座椅位置 2 分 2.4.1.5.1 駕駛狀態監測系統 TNCAP 執行機構及檢測機構將審查車輛業者所提供的駕駛狀態監測

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	the manufacturer and will decide on the applicability of awarding the point for DSM. It should be noted that systems using Time-on-Task only will not be awarded.		系統之資料，並確認適用於駕駛狀態監測系統之分數。 僅使用在限時任務(Time-on-Task)之系統，將不會獲取分數。(第二版條文 2.4.1.5.1 已調整至第三版條文 2.4.1.5.2，並修訂部分內容)
3.6.1 Seatbelt Reminder 1.0/n points is available for each rear seating position with occupant detection systems that is also compliant with Section 3.4.3.2.3, where n is the total number of rear seating positions.	3.6.2 Seatbelt Reminder All front row seating positions must meet the assessment criteria of section 3.4.1 and 3.4.2 as a prerequisite of scoring SBR point for the rear seating positions and DSM. 3.6.2.1 Rear seating positions Rear seating positions (including optional third or more rows of seats) are eligible for scoring 1.0/n points (with n the number of rear seating positions) for seating positions without occupant detection. An additional 1.0/n points is available for rear seating positions with occupant detection systems.	2.4.1.5.1 安全帶提醒裝置 每個配備乘員偵測系統的後排座椅位置若該系統亦符合 2.4.1.3.3.2.3 節可獲得 1.0/n 分，其中 n 是後排座椅位置的總數。	2.4.1.5.2 安全帶提醒裝置 後排位置之安全帶提醒裝置及駕駛狀態監測系統之得分前提，為第一排所有座椅位置應符合 2.4.1.3.1 與 2.4.1.3.2 評等標準。 2.4.1.5.2.1 後排座椅位置 後排座椅位置（包括選配之第三排或以後之座椅），可在座位未設有乘員偵測系統的情況下獲得 1.0 / n 分（後排位置數量為 n）。設有乘員偵測系統者，後排位置可額外獲得 1.0 / n 分。

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3.6.1.1 SBR Scoring examples - 5-Seater (2 Front + 3 Rear) with occupant detection on all seats - Row 1 Driver & Passenger prerequisite - Rear occupant detection on 3 seats 1.000 Points $\frac{1.0}{n} * \#$ of seats with detection $=$ $\left(\frac{1.0}{3}\right) * 3$ - Total SBR Score 1.000 Points - 5-Seater (2 Front + 3 Rear) with occupant detection on outboard rear seats. - Row 1 Driver & Passenger prerequisite - Rear occupant detection on 2 seats 0.667 Points $\frac{1.0}{n} * \#\ of\ seats\ with\ detection =$	3.6.2.2 SBR Scoring examples - 5-Seater (2 Front + 3 Rear) with occupant detection on all seats - Driver & Passenger prerequisite - Rear Seats 1.000 Points - Rear occupant detection on 3 seats 1.000 Points $\frac{1.0}{n} * \#\ of\ seats\ with\ detection =$ $\left(\frac{1.0}{3}\right) * 3$ - Total SBR Score 2.000 Points - 5-Seater (2 Front + 3 Rear) with occupant detection on outboard rear seats. - Driver & Passenger prerequisite - Rear Seats 1.000 Points - Rear occupant detection on 2 seats 0.667 Points $\frac{1.0}{n} * \#\ of\ seats\ with\ detection =$	2.4.1.5.1.1 安全帶提醒裝置得分範例 (1) 5 人座(2 前+3 後)，全部座位都有乘員偵測功能 (A) 第一排駕駛與乘客 前提條件 (B) 3 座位之後排乘員偵測 1.000 分 $\frac{1.0}{n} * \#$ 有偵測之座位 $= \left(\frac{1.0}{3}\right) * 3$ 總得分 1.000 分 (2) 5 人座(2 前+3 後)，後排外側座位有乘員偵測功能。 (A) 第一排駕駛與乘客 前提條件 (B) 2 座位之後排乘員偵測 0.667 分 $\frac{1.0}{n} * \#$ 有偵測之座位 $= \left(\frac{1.0}{3}\right) * 2$ 總得分 0.667 分	2.4.1.5.2.2 安全帶提醒裝置得分範例 (1) 5 人座(2 前+3 後)，全部座位都有乘員偵測功能 (A) 駕駛與乘客 前提條件 (B) 後排座椅 1.000 分 (C) 3 座位之後排乘員偵測 1.000 分 $\frac{1.0}{n} * \#$ 有偵測之座位 $= \left(\frac{1.0}{3}\right) * 3$ 總得分 2.000 分 (2) 5 人座(2 前+3 後)，後排外側座位有乘員偵測功能。 (A) 駕駛與乘客 前提條件 (B) 後排座椅 1.000 分 (C) 2 座位之後排乘員偵測 0.667 分 $\frac{1.0}{n} * \#$ 有偵測之座位 $= \left(\frac{1.0}{3}\right) * 2$ 總得分 1.667 分

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$\left(\frac{1.0}{3}\right) * 2$ - Total SBR Score 0.667 Points - 6-Seater (3 Front + 3 Rear) with occupant detection on outboard rear seats. - Row 1 Driver & Passengers prerequisite - Rear occupant detection on 2 seats 0.667 Points $\frac{1.0}{n} * \#\ of\ seats\ with\ detection =$ $\left(\frac{1.0}{3}\right) * 2$ - Total SBR Score 0.667 Points	$\left(\frac{1.0}{3}\right) * 2$ - Total SBR Score 1.667 Points	(3) 6 人座（3 前+ 3 後），後排外側座位有乘員偵測功能。 (A) 第一排駕駛與乘客 前提條件 (B) 2 座位之後排乘員偵測 0.667 分 $\frac{1.0}{n} * \#\text{有偵測之座位} = \left(\frac{1.0}{3}\right) * 2$ 總得分 0.667 分	
- 7-Seater (2 Front + 3 2nd Row + 2 3rd Row) with occupant detection on all seats in the 2nd row. - Row 1 Driver & Passenger prerequisite - Rear occupant detection on 3 seats	- 7-Seater (2 Front + 3 2nd Row + 2 3rd Row) with occupant detection on all seats in the 2nd row. - Driver & Passenger prerequisite - Rear Seats 1.000 Points - Rear occupant detection on 3 seats 0.600 Points	(4) 7 人座（2 前+第 2 排 3 個座位 + 第 3 排 2 個座位），第 2 排所有座位都有乘員偵測。 (A) 第一排駕駛與乘客 前提條件 (B) 3 座位之後排乘員偵測 0.600 分	(3) 7 人座（2 前+第 2 排 3 個座位+第 3 排 2 個座位），第 2 排所有座位都有乘員偵測。 (A) 駕駛與乘客 前提條件 (B) 後排座椅 1.000 分 (C) 3 座位之後排乘員偵測 0.600 分

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0.600 Points $\frac{1.0}{n} * \#\ of\ seats\ with\ detection =$ $\left(\frac{1.0}{5}\right) * 3$ - Total SBR Score 0.600 Points	$\frac{1.0}{n} * \#\ of\ seats\ with\ detection =$ $\left(\frac{1.0}{5}\right) * 3$ - Total SBR Score 1.600 Points	$\frac{1.0}{n} *$ # 有偵測之座位 $= \left(\frac{1.0}{5}\right) * 3$ 總得分 0.600 分	$\frac{1.0}{n} *$ # 有偵測之座位 $= \left(\frac{1.0}{5}\right) * 3$ 總得分 1.600 分
- 7-Seater (2 Front + 3 2nd Row + 2 3rd Row) with occupant detection on outboard seats in the 2nd row only. - Row 1 Driver & Passenger prerequisite - Rear occupant detection on 2 seats 0.400 Points $\frac{1.0}{n} * \#\ of\ seats\ with\ detection =$ $\left(\frac{1.0}{5}\right) * 2$ - Total SBR Score 0.400 Points	- 7-Seater (2 Front + 3 2nd Row + 2 3rd Row) with occupant detection on outboard seats in the 2nd row. - Driver & Passenger prerequisite - Rear Seats 1.000 Points - Rear occupant detection on 2 seats 0.400 Points $\frac{1.0}{n} * \#\ of\ seats\ with\ detection =$ $\left(\frac{1.0}{5}\right) * 2$ - Total SBR Score 1.400 Points	(5) 7 人座（2 前+第 2 排 3 個座位 + 第 3 排 2 個座位），僅第 2 排外側座位有乘員偵測功能。 (A) 第一排駕駛與乘客 前提條件 (B) 2 座位之後排乘員偵測 0.400 分 $\frac{1.0}{n} *$ # 有偵測之座位 $= \left(\frac{1.0}{5}\right) * 2$ 總得分 0.400 分	(4) 7 人座（2 前+第 2 排 3 個座位+第 3 排 2 個座位），第 2 排外側座位有乘員偵測功能。 (A) 駕駛與乘客 前提條件 (B) 後排座椅 1.000 分 (C) 2 座位之後排乘員偵測 0.400 分 $\frac{1.0}{n} *$ # 有偵測之座位 $= \left(\frac{1.0}{5}\right) * 2$ 總得分 1.400 分
- 7-Seater (2 Front + 3 2nd Row + 2 3rd Row) with occupant detection on outboard seats in the 2nd row, and no SBR in the third row.	- 7-Seater (2 Front + 3 2nd Row + 2 3rd Row) with occupant detection on outboard seats in the 2nd row, and no SBR in the third row.	(6) 7 人座（2 前+第 2 排 3 個座位 + 第 3 排 2 個座位），第 2 排外側座位有乘員偵測功能，第 3 排未裝設安全帶提醒裝置。	(5) 7 人座（2 前+第 2 排 3 個座位+第 3 排 2 個座位），第 2 排外側座位有乘員偵測功能，第 3 排未裝設安全帶提醒裝置。

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- Row 1 Driver & Passenger prerequisite - Rear Seats 0.000 Points - Total SBR Score 0.000 Points - Vehicle NOT eligible for DSM scoring 3.6.2 Driver State Monitoring The Euro NCAP Secretariat will review the DSM dossier provided by the OEM and will ask the test laboratory to spot check a number of Distraction, Fatigue and Unresponsive Driver situations before awarding the points.	- Driver & Passenger prerequisite - Rear Seats 0.600 Points $\frac{1.0}{n} * \#\ of\ seats = \left(\frac{1.0}{5}\right) * 3$ - Rear occupant detection on 2 seats 0.400 Points $\frac{1.0}{n} * \#\ of\ seats\ with\ detection =$ $\left(\frac{1.0}{5}\right) * 2$ - Total SBR Score 1.000 Points …	(A) 第一排駕駛與乘客 前提條件 (B) 後排座椅 0.000 分 總得分 0.000 分 車輛不符合 DSM 得分條件 2.4.1.5.2 駕駛狀態監測系統 TNCAP 執行機構及檢測機構將審查車輛業者所提供的駕駛狀態監測系統之資料，並要求檢測機構在授予分數前抽查一些駕駛分心、疲勞以及駕駛無反應之情況。 (請參末頁表格)	(A) 駕駛與乘客 前提條件 (B) 後排座椅 0.600 分 $\frac{1.0}{n} * \#\ 座位 = \left(\frac{1.0}{5}\right) * 3$ (C) 2 座位之後排乘員偵測 0.400 分 $\frac{1.0}{n} * \#\ 有偵測之座位 = \left(\frac{1.0}{5}\right) * 2$ 總得分 1.000 分 …

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		Distraction Scenario	Movement Type	Predicted score			
				Warning	Intervention	Sub Total	Total
Distraction	Long Distraction	Away from road / non driving task	Owl	0.03	0.03	0.06	0.30
			Lizard	0.03	0.03	0.06	
			Body Lean	0.03	0.03	0.06	
		Driving task	Owl	0.03	0.03	0.06	
			Lizard	0.03	0.03	0.06	
	Short Distraction (VATS)	Away from road / non driving task	Owl	0.03	0.03	0.06	0.30
			Lizard	0.03	0.03	0.06	
		Driving task	Owl	0.03	0.03	0.06	
			Lizard	0.03	0.03	0.06	
		Away from road (multi-location)	Lizard	0.03	0.03	0.06	
	Phone Use	Phone Use Detection - Basic	Owl + Lizard	0.05	0.10	0.15	0.30
		Phone Use Detection - Advanced	Lizard	0.05	0.10	0.15	
Fatigue	Drowsiness			0.25	0.10	0.35	0.35
	Microsleep			0.20	0.10	0.30	0.30
	Sleep			0.05	0.20	0.25	0.2
Unresponsive Driver					0.20	0.20	0.20
Total							2.00

For intervention-only strategies, the score for Warning shall be automatically awarded in the corresponding gaze locations as per 3.5.3.1.1.

…

對於僅採介入(Intervention-only)策略者，依第 2.4.1.4.3.1.1 節規定，在對應之注視位置中，警示項目之分數將自動獲得。

…

修正後	修正前

3.5.3.1.1

Distraction Type	Distraction Scenario	Movement Type	Gaze Location	Vehicle Response
Long Distraction	Away from forward road / non-driving task	Owl	Driver side window	Warning and Intervention
			Passenger side window	
			Passenger footwell	
			Passenger face	

修正後					修正前
			In-vehicle infotainment system		
		Lizard	In-vehicle infotainment system		
			Glovebox		
		Body Lean	Passenger footwell		
			Rear passenger		
	Driving Task	Owl	Rear view mirror	Warning and Intervention OR Intervention only	
			Passenger side mirror		
			Driver side mirror		
		Lizard	Instrument Cluster		
			Driver side mirror		
			Rear view mirror		
Short Distraction (VATS)	Away from forward road / non-driving task	Owl	In-vehicle infotainment system	Warning and Intervention	
			Passenger side window		
			Passenger footwell		
		Lizard	Driver side window		
			Passenger footwell		
			In-vehicle infotainment system	Warning and Intervention OR Intervention only	
	Driving Task	Owl	Rear view mirror		
			Passenger side mirror		
			Driver side mirror		
		Lizard	Instrument Cluster		

修正後					修正前
			Driver side mirror		
			Rear view mirror		
	Away from road (multi-location)	Lizard	Any combination of non-driving task locations	Warning and Intervention	
Phone use	Phone Use Detection - Basic	Owl	Driver knee driver side	Warning and Intervention	
			Driver knee passenger side		
			Driver lap		
			Phone mounted on dashboard driver side		
			Phone in OEM designed charge port or dedicated phone holding position		
		Lizard	Driver knee driver side		
			Driver knee passenger side		
			Driver lap		
			Phone held centre of steering wheel (below cluster view)		
			Phone in OEM designed charge port or dedicated phone holding position		

修正後					修正前
			Phone mounted on dashboard driver side	Warning and Intervention OR Intervention only	
			Phone held in 9-11 or 13-15 o'clock region on wheel (uppermost position below windscreen view and outside of cluster view)		
	Phone Use Detection - Advanced	Lizard	Phone held in view of windscreen		
			Phone held in view of instrument cluster		
			Phone mounted in forward view of windscreen		

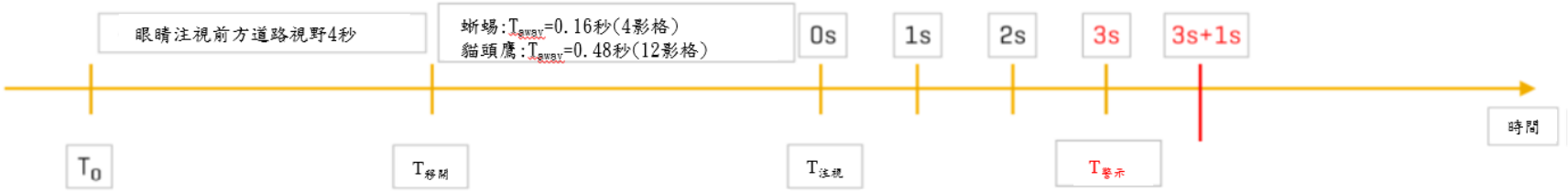
2.4.1.4.3.1.1

修正後					修正前
分心型式	分心情境	運動型式	注視位置	車輛反應	
長期分心	遠離前方道路，非駕駛任務	貓頭鷹	駕駛側車窗	警示及介入	
			第一排乘客側車窗		
			乘客腳部空間		
			乘客臉部		
			車用資訊娛樂系統		
		蜥蜴	車用資訊娛樂系統		
			手套箱		
		身體傾斜	乘客腳部空間		
			後排乘客		
	駕駛任務	貓頭鷹	後視鏡	警示及介入或僅介入	
			第一排乘客側後視鏡		
			駕駛側後視鏡		
		蜥蜴	儀表板		
			駕駛側後視鏡		
			後視鏡		
短期分心（VATS）	遠離前方道路，非駕駛任務	貓頭鷹	車用資訊娛樂系統	警示及介入	
			第一排乘客側車窗		
			乘客腳部空間		
		蜥蜴	駕駛側車窗		
			乘客腳部空間		
			車用資訊娛樂系統	警示及介入或僅介入	
	駕駛任務	貓頭鷹	後視鏡		
			第一排乘客側後視鏡		

修正後	修正前

3.5.3.1.2

2.4.1.4.3.1.2



3.6.2

		Distraction Scenario	Movement Type	Predicted score			
				Warning	Intervention	Sub Total	Total
Distraction	Long distraction	Away from road / non driving task	Owl	0.03	0.03	0.06	0.30
			Lizard	0.03	0.03	0.06	
			Body Lean	0.03	0.03	0.06	
		Driving Task	Owl	0.03	0.03	0.06	
			Lizard	0.03	0.03	0.06	
	Short Distraction (VATS)	Away from road / non driving task	Owl	0.03	0.03	0.06	0.30
			Lizard	0.03	0.03	0.06	
		Driving Task	Owl	0.03	0.03	0.06	

修正後								修正前
			Lizard	0.03	0.03	0.06		
		Away from road (multi-location)	Lizard	0.03	0.03	0.06		
	Phone Use	Phone Use Detection - Basic	Owl + Lizard	0.05	0.10	0.15	0.30	
		Phone Use Detection - Advanced	Lizard	0.05	0.10	0.15		
Fatigue	Drowsiness			0.25	0.10	0.35	0.35	
	Microsleep			0.20	0.10	0.30	0.30	
	Sleep			0.05	0.20	0.25	0.20	
Unresponsive Driver					0.20	0.20	0.20	
Total							2.00	

2.4.1.5.2

		分心情境	運動型式	預測得分			
				警示	介入	小計	總分
分心	長期分心	遠離道路/非駕駛任務	貓頭鷹	0.03	0.03	0.06	0.30
			蜥蜴	0.03	0.03	0.06	
			身體傾斜	0.03	0.03	0.06	
		駕駛任務	貓頭鷹	0.03	0.03	0.06	
			蜥蜴	0.03	0.03	0.06	
	短期分心(VATS)	遠離道路/非駕駛任務	貓頭鷹	0.03	0.03	0.06	0.30
			蜥蜴	0.03	0.03	0.06	
		駕駛任務	貓頭鷹	0.03	0.03	0.06	
			蜥蜴	0.03	0.03	0.06	

修正後								修正前
		遠離道路(多點)	蜥蜴	0.03	0.03	0.06		
	手機使用	手機使用偵測-基本	貓頭鷹+蜥蜴	0.05	0.10	0.15	0.30	
		手機使用偵測-進階	蜥蜴	0.05	0.10	0.15		
疲勞	嗜睡			0.25	0.10	0.35	0.35	
	微睡眠			0.20	0.10	0.30	0.30	
	睡眠			0.05	0.20	0.25	0.25	
駕駛無反應					0.20	0.20	0.20	
總分							2.00	

3.10緊急煞車輔助系統(車對車)試驗規章

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2 DEFINITIONS … **Peak Braking Coefficient (PBC)** – the measure of tyre to road surface friction based on the maximum deceleration of a rolling tyre, measured using the American Society for Testing and Materials (ASTM) E1136-10 (2010) standard reference test tyre, in accordance with ASTM Method E 1337-90 (reapproved 1996), at a speed of 64.4km/h, without water delivery. Alternatively, the method as specified in UNECE R13-H. …	**2 DEFINITIONS** … **Peak Braking Coefficient (PBC) –** the measure of tyre to road surface friction based on the maximum deceleration of a rolling tyre, measured using the American Society for Testing and Materials (ASTM) E1136-10 (2010) standard reference test tyre, in accordance with ASTM Method E 1337-90 (reapproved 1996), at a speed of 64.4km/h, without water delivery. … **Dynamic Brake Support (DBS) –** a system that further amplifies the driver braking demand in response to the detection of a likely collision to achieve a greater deceleration than would otherwise be achieved for the braking demand in normal driving conditions.	3.10.1 名詞釋義 … 3.10.1.1 最高煞車係數（Peak Braking Coefficient, PBC）：根據滾動輪胎最大減速度計算出輪胎與路面摩擦力，本數值係使用美國材料和試驗協會（American Society for Testing and Materials, ASTM）F2493-20 標準試驗輪胎，且符合美國材料和試驗協會 E1337-19 試驗方法，以時速 64.4km/h 於乾燥路面上試驗，或依「車輛安全檢測基準」項次「四十三之二」6.2.5.1 所規範之方法。 …	3.10.1 名詞釋義 … 3.10.1.1 最高煞車係數（Peak Braking Coefficient, PBC）：根據滾動輪胎最大減速度計算出輪胎與路面摩擦力，本數值係使用美國材料和試驗協會（American Society for Testing and Materials, ASTM）E1136-10（2010）標準試驗輪胎，且符合美國材料和試驗協會 E1337-90 （1996 年重新核可）試驗方法，以時速 64.4km/h 於乾燥路面上試驗，或依「車輛安全檢測基準」項次「四十三之二」6.2.5.1 所規範之方法。 … 3.10.1.4 動態煞車輔助系統（Dynamic Brake Support, DBS）：在車輛偵測到可能發生碰撞情況下，此系統能加強煞車效能，達到比平時行駛作動煞車時更大的減速度。

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	Car-to-Car Rear Stationary (CCRs) – a collision in which a vehicle travels forwards towards another stationary vehicle and the frontal structure of the vehicle strikes the rear structure of the other.	(第二版條文 3.10.1.5 已調整至第三版條文 3.10.2.1)	3.10.1.5 前車靜止情境試驗（Car-to-Car Rear Stationary, CCRs）：係指後方車輛往前行駛接近靜止的前方車輛，且行駛車輛之車頭碰撞靜止車輛之車尾。
	Car-to-Car Rear Moving (CCRm) – a collision in which a vehicle travels forwards towards another vehicle that is travelling at constant speed and the frontal structure of the vehicle strikes the rear structure of the other.	(第二版條文 3.10.1.5 已調整至第三版條文 3.10.2.1)	3.10.1.6 前車移動情境試驗（Car-to-Car Rear Moving, CCRm）：係指後方車輛往前行駛接近以恆定速度行駛之前方車輛，且行駛車輛之車頭碰撞以恆定速度行駛車輛之車尾。
	Car-to-Car Rear Braking (CCRb) – a collision in which a vehicle travels forwards towards another vehicle that is travelling at constant speed and then decelerates, and the frontal structure of the vehicle strikes the rear structure of the other.	(第二版條文 3.10.1.5 已調整至第三版條文 3.10.2.1)	3.10.1.7 前車煞車情境試驗（Car-to-Car Rear Braking, CCRb）：係指後方車輛往前行駛接近原以恆定速度行駛而後減速之前方車輛，且行駛車輛之車頭碰撞減速車輛之車尾。
Autonomous Emergency Steering (AES) – steering that is applied automatically by the vehicle in response to the detection of a likely		3.10.1.2 自動緊急轉向輔助系統(Autonomous Emergency Steering, AES)：車輛偵測到可能發生碰撞情況下，系統自動介入轉向以使車輛繞	

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collision to steer the vehicle around the vehicle in front to avoid the collision. **Emergency Steering Support (ESS)** – a system that supports the driver steering input in response to the detection of a likely collision to alter the vehicle path and potentially avoid a collision.		過前方車輛並避免碰撞情事發生。 3.10.1.3 緊急轉向輔助系統(Emergency Steering Support, ESS):車輛偵測到可能發生碰撞情況下，系統介入輔助駕駛進行轉向，致使改變車輛行駛路徑並避免碰撞情事發生。	
Vehicle under test (VUT) – means the vehicle tested according to this protocol with a pre-crash collision mitigation or avoidance system on board	**Vehicle under test (VUT)** – means the vehicle tested according to this protocol with a pre-crash collision mitigation or avoidance system on board	3.10.1.4 受驗車輛（Vehicle under test, VUT）：係指配備減緩碰撞或預防碰撞系統，並依據此規章進行試驗之車輛。	3.10.1.8 受驗車輛（Vehicle under test, VUT）：係指配備減緩碰撞或預防碰撞系統，並依據此規章進行試驗之車輛。
Vehicle width – the widest point of the vehicle ignoring the rear-view mirrors, side marker lamps, tyre pressure indicators, direction indicator lamps, position lamps, flexible mud-guards and the deflected part of the tyre side-walls immediately above the point of contact with the ground.	**Vehicle width** – the widest point of the vehicle ignoring the rear-view mirrors, side marker lamps, tyre pressure indicators, direction indicator lamps, position lamps, flexible mud-guards and the deflected part of the tyre side-walls immediately above the point of contact with the ground.	3.10.1.5 車輛寬度（Vehicle width）：車輛最大寬度不包括後視鏡、側方標識燈、胎壓偵測裝置、方向燈、位置燈、軟式擋泥板及位於地面接觸點正上方之輪胎胎壁(Side-wall)最突出部分。	3.10.1.9 車輛寬度（Vehicle width）：車輛最大寬度不包括後視鏡、側方標識燈、胎壓偵測裝置、方向燈、位置燈、軟式擋泥板及位於地面接觸點正上方之輪胎胎壁(Side-wall)最突出部分。

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Global Vehicle Target (GVT) – means the vehicle target used in this protocol as defined in ISO 19206-3:2021	**Global Vehicle Target (GVT)** – means the vehicle target used in this protocol	3.10.1.6 全球目標車（Global Vehicle Target, GVT）：係指 ISO 19206-3:2021 中定義之本試驗規章所規範之目標車。	3.10.1.10 全球目標車（Global Vehicle Target, GVT）：本試驗規章所規範之目標車。
Secondary Other Vehicle (SOV) – means the vehicle being overtaken by VUT in CCFhol scenario. This vehicle can either be a GVT or a real vehicle.		3.10.1.7 其他次要車輛（Secondary Other Vehicle, SOV）：係指於對向車輛變換車道情境試驗中，行駛於對向車道之車輛，該車輛為全球目標車或真實車輛。	
Time To Collision (TTC) – means the remaining time before the VUT strikes the GVT, assuming that the VUT and GVT would continue to travel with the speed it is travelling.	**Time To Collision (TTC) –** means the remaining time before the VUT strikes the GVT, assuming that the VUT and GVT would continue to travel with the speed it is travelling.	3.10.1.8 碰撞時間（Time To Collision, TTC）：若受驗車輛與全球目標車皆依其速度向前行進，受驗車輛會碰撞全球目標車之預估時間值。	3.10.1.11 碰撞時間（Time To Collision, TTC）：若受驗車輛與全球目標車皆依其速度向前行進，受驗車輛會碰撞全球目標車之預估時間值。
T_{AEB} – means the time where the AEB system activates. Activation time is determined by identifying the last data point where the filtered acceleration signal is below -1 m/s^2, and then going back to the point in time where the acceleration first crossed -0.3 m/s^2	**T_{AEB}** – means the time where the AEB system activates. Activation time is determined by identifying the last data point where the filtered acceleration signal is below -1 m/s^2, and then going back to the point in time where the acceleration first crossed -0.3 m/s^2	3.10.1.9 緊急煞車輔助系統觸發時間（T_{AEB}）：觸發時間點的定義方式為找出最後一個濾波後加速度信號低於-1m/s^2 的數據點，再往回找出加速度首次達到-0.3m/s^2 的數據點，該點之時間即為觸發時間點。	3.10.1.12 緊急煞車輔助系統觸發時間（T_{AEB}）：觸發時間點的定義方式為找出最後一個濾波後加速度信號低於-1m/s^2 的數據點，再往回找出加速度首次達到-0.3m/s^2 的數據點，該點之時間即為觸發時間點。

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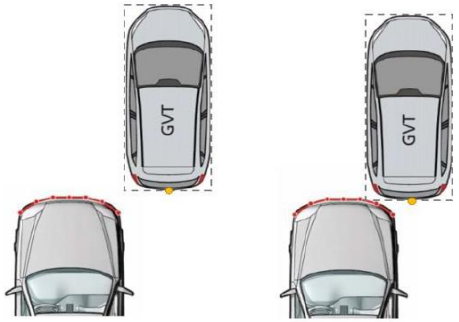
T_{FCW} – means the time where the audible warning of the FCW starts. The starting point is determined by audible recognition	**T_{FCW}** – means the time where the audible warning of the FCW starts. The starting point is determined by audible recognition	3.10.1.10 前方碰撞預警系統觸發時間點（T_{FCW}）：前方碰撞預警系統之聲音警示觸發的時間，起始點以聲音辨識作判定。	3.10.1.13 前方碰撞預警系統觸發時間點（T_{FCW}）：前方碰撞預警系統之聲音警示觸發的時間，起始點以聲音辨識作判定。
V_{impact} – means the speed at which the profiled line around the front end of the VUT coincides with the rectangular shape of the GVT as shown in the right part of Figure 2-1 Front end profile and GVT.	**V_{impact}** – means the speed at which the VUT hits the GVT	3.10.1.11 碰撞速度（V_{impact}）：係指受驗車輛之車頭標示線與全球目標車虛擬矩形範圍碰撞時之速度，如圖 1 車頭標示線與全球目標車之右側部分所示。	3.10.1.14 碰撞速度（V_{impact}）：受驗車輛碰撞全球目標車(GVT)時的速度。
V_{rel_impact} – means the relative speed at which the VUT hits the GVT by subtracting the velocity of the GVT from V_{impact} at the time of collision.  Figure 2-1 Front end profile and GVT	**V_{rel_impact}** – means the relative speed at which the VUT hits the GVT by subtracting the velocity of the GVT from V_{impact} at the time of collision.	3.10.1.12 碰撞相對速度（Vrel_impact）：受驗車輛碰撞全球目標車時的相對速度，計算方式為碰撞速度減去全球目標車遭碰撞時之速度。 (請參末頁圖示)	3.10.1.15 碰撞相對速度（Vrel_impact）：受驗 車輛碰撞全球目標車時的相對速度，計算方式為碰撞速度減去全球目標車遭碰撞時之速度。

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2.2 Test Scenarios **Car-to-Car Rear Stationary (CCRs)** – a collision in which a vehicle travels forwards towards another stationary vehicle and the frontal structure of the vehicle strikes the rear structure of the other. **Car-to-Car Rear Moving (CCRm)** – a collision in which a vehicle travels forwards towards another vehicle that is travelling at constant speed and the frontal structure of the vehicle strikes the rear structure of the other. **Car-to-Car Rear Braking (CCRb)** – a collision in which a vehicle travels forwards towards another vehicle that is travelling at constant speed and then decelerates, and the frontal structure of the vehicle strikes the rear structure of the other. **Car-to-Car Front Turn-Across-Path (CCFtap)** – a collision in which a		3.10.2 試驗情境 3.10.2.1 前車靜止情境試驗（Car-to-Car Rear Stationary, CCRs）：係指後方車輛往前行駛接近靜止的前方車輛，且行駛車輛之車頭碰撞靜止車輛之車尾。 3.10.2.2 前車移動情境試驗（Car-to-Car Rear Moving, CCRm）：係指後方車輛往前行駛接近以恆定速度行駛之前方車輛，且行駛車輛之車頭碰撞以恆定速度行駛車輛之車尾。 3.10.2.3 前車煞車情境試驗（Car-to-Car Rear Braking, CCRb）：係指後方車輛往前行駛接近原以恆定速度行駛而後減速之前方車輛，且行駛車輛之車頭碰撞減速車輛之車尾。 3.10.2.4 轉彎穿越路徑情境試驗（Car-to-Car Front Turn-Across-Path,	

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vehicle turns across the path of an oncoming vehicle travelling at constant speed, and the frontal structure of the vehicle strikes the front structure of the other.		CCFtap）：係指當車輛轉彎穿越路徑，其與以恆定速度行駛之對向來車，雙方車輛之前方結構可能發生碰撞之情境。	
Car-to-Car Crossing Straight Crossing Path (CCCscp) – a collision in which a vehicle travels forwards along a straight path across a junction, towards a vehicle crossing the junction on a perpendicular path. The frontal structure of the vehicle under test strikes the side of the other vehicle.		3.10.2.5 直行交匯路徑情境試驗（Car-to-Car Crossing Straight Crossing Path, CCCscp）：係指當車輛直行穿越交匯處，其與行駛垂直路徑之車輛，受驗車輛之前方結構可能與其他車輛之側方結構發生碰撞之情境。	
Car-to-Car Front Head-On Straight (CCFhos) – a collision where a vehicle is travelling along a straight path within its defined lane and strikes another vehicle travelling in the opposite direction, which has drifted into the same lane as the original vehicle. The frontal structure of the vehicle strikes the frontal structure of the other.		3.10.2.6 前方對向來車直行情境試驗（Car-to-Car Front Head-On Straight, CCFhos）：係指當車輛直行該車道內，其與偏移車道至該車道內之對向來車，雙方車輛之前方結構可能發生碰撞之情境。	

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Car-to-Car Front Head-On Lane change (CCFhol) – a collision where a vehicle is travelling along a straight path within its defined lane and strikes another vehicle travelling in the opposite direction which has intentionally moved into the lane of the original vehicle to attempt an overtake. The frontal structure of the vehicle strikes the frontal structure of the other.		3.10.2.7 前方對向來車變換車道情境試驗（Car-to-Car Front Head-On Lane change, CCFhol）：係指當車輛直行該車道內，其與行駛對向車道欲超車並駛入該車道內之對向來車，雙方車輛之前方結構可能發生碰撞之情境。	
3 REFERENCE SYSTEM 3.1 Convention 3.1.1 For both VUT and GVT use the convention specified in ISO 8855:1991 in which the x-axis points towards the front of the vehicle, the y-axis towards the left and the z-axis upwards (right hand system), with the origin at the most forward point on the centreline of the VUT for dynamic data measurements as shown in Figure 3-1. 3.1.2 Viewed from the origin, roll, pitch and yaw rotate clockwise around the x,	**3 REFERENCE SYSTEM** 3.1 Convention 3.1.1 For both VUT and GVT use the convention specified in ISO 8855:1991 in which the x-axis points towards the front of the vehicle, the y-axis towards the left and the z-axis upwards (right hand system), with the origin at the most forward point on the centreline of the VUT for dynamic data measurements as shown in Figure 1. 3.1.2 Viewed from the origin, roll, pitch and yaw rotate clockwise around the x,	3.10.3 參考系統 3.10.3.1 通則 3.10.3.1.1 受驗車輛與全球目標車皆使用 ISO 8855:1991 之通則進行動態數據測量。此通則中 X 軸指向車頭、Y 軸指向車輛左側、Z 軸則指向車頂（右手座標系統），原點則是受驗車輛中線之最前點，如圖 2 所示。 3.10.3.1.2 以原點為中心，翻轉角（roll）、俯仰角（pitch）與橫擺角	3.10.2 參考系統 3.10.2.1 通則 3.10.2.1.1 受驗車輛與全球目標車皆使用 ISO 8855:1991 之通則進行動態數據測量。此通則中 X 軸指向車頭、Y 軸指向車輛左側、Z 軸則指向車頂（右手座標系統），原點則是受驗車輛中線之最前點，如圖 1 所示。 3.10.2.1.2 以原點為中心，翻轉角（roll）、俯仰角（pitch）與橫擺角

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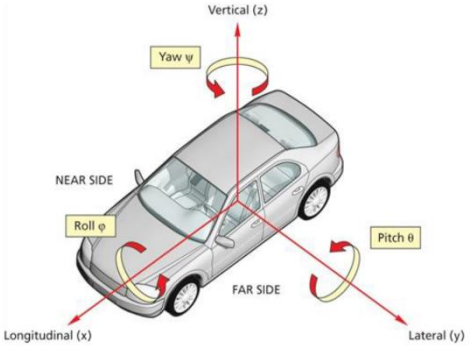
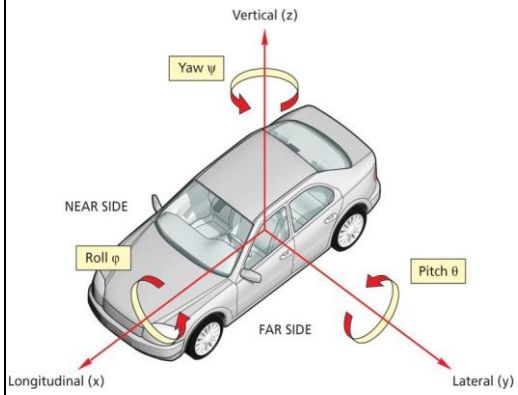
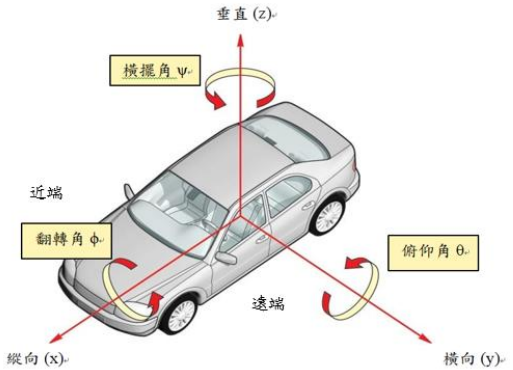
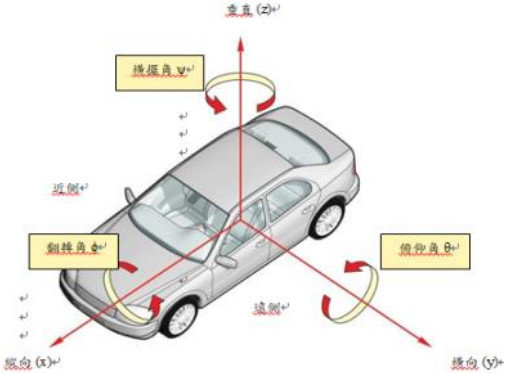
y and z axes respectively. Longitudinal refers to the component of the measurement along the x-axis, lateral the component along the y-axis and vertical the component along the z-axis. 3.1.3 This reference system should be used for both left- and right-hand drive vehicles tested. 3.1.4 The nearside is swapped as per LHD and RHD vehicles. Figure 3-1 shows the near and farside of the vehicle for a left hand driven (LHD) vehicle.  Figure 3-1: Coordinate system and	y and z axes respectively. Longitudinal refers to the component of the measurement along the x-axis, lateral the component along the y-axis and vertical the component along the z-axis. 3.1.3 This reference system should be used for both left and right hand drive vehicles tested  Figure 1: Coordinate system and	（yaw）分別以順時針方式繞 X 軸、Y 軸與 Z 軸。縱向為沿著 X 軸的測量方式、橫向為沿著 Y 軸的測量方式、垂直向則是沿著 Z 軸的測量方式。  	（yaw）分別以順時針方式繞 X 軸、Y 軸與 Z 軸。縱向為沿著 X 軸的測量方式、橫向為沿著 Y 軸的測量方式、垂直向則是沿著 Z 軸的測量方式。 

<table>
<tr><th>2025 AEB 試驗規章</th><th>2019 AEB 試驗規章</th><th>修訂 TNCAP 條文草案(第三版)</th><th>對應 TNCAP 條文</th></tr>
<tr><td>notation</td><td>notation</td><td>圖 2：座標系統與標記</td><td>圖 1：座標系統與標記</td></tr>
<tr><td>3.2 VUT longitudinal path error
3.2.1 The VUT longitudinal path error is determined as the difference between the desired position and the actual position of the front of the VUT when measured at a single defined “stable” position of the front of the GVT during the test.

VUT longitudinal path error = $X_{VUT,\ desired} - X_{VUT,\ actual}$ (@X_{GVT})

For CCFtap, when the origin of the reference system is at the intended collision point, the values shown in the table below shall be used to determine the VUT longitudinal path error.
<table><tr><th>VUT speed</th><th>GVT speed</th><th>$X_{VUT,\ desired}$</th><th>X_{GVT}</th></tr><tr><td rowspan="3">10 km/h</td><td>30 km/h</td><td rowspan="3">- 9.57 m</td><td>29.17 m</td></tr><tr><td>45 km/h</td><td>43.75 m</td></tr><tr><td>60 km/h</td><td>58.33 m</td></tr><tr><td rowspan="3">15 km/h</td><td>30 km/h</td><td rowspan="3">- 14.53 m</td><td>29.17 m</td></tr><tr><td>45 km/h</td><td>43.75 m</td></tr><tr><td>60 km/h</td><td>58.33 m</td></tr><tr><td rowspan="3">20 km/h</td><td>30 km/h</td><td rowspan="3">- 19.47 m</td><td>29.17 m</td></tr><tr><td>45 km/h</td><td>43.75 m</td></tr><tr><td>60 km/h</td><td>58.33 m</td></tr></table></td><td></td><td>3.10.3.2 受驗車輛縱向偏移量
3.10.3.2.1 受驗車輛縱向偏移量（longitudinal path error）之定義為當量測到全球目標車前方之穩定位置時，受驗車輛前方期望位置與實際位置之差值。

受驗車輛縱向偏移量＝X_{VUT} 期望 - X_{VUT} 實際 (@X_{GVT})

對於轉彎穿越路徑情境試驗，當參考系統原點位於預期碰撞點時，應使用下表所示之數值決定受驗車輛縱向偏移量。
(請參末頁表格)</td><td></td></tr>
</table>

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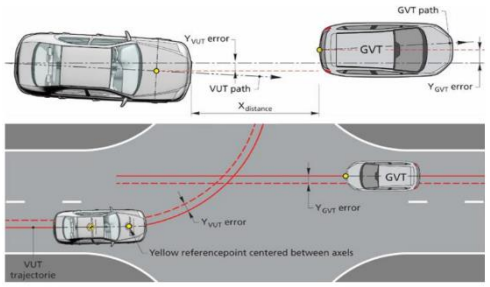
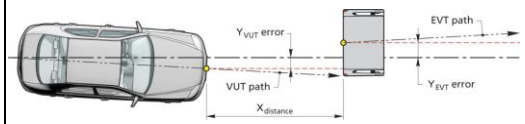
3.3 VUT Lateral path error 3.3.1 The lateral path error is determined as the lateral distance between the centre of the front axle of the VUT and the centre of the rear of the GVT when measured in parallel to the intended straight-lined path as shown in the figure below. Lateral path error = Y_{VUT} error + Y_{GVT} error  Figure 3-2: Lateral path error	**3.2 Lateral path error** 3.2.1 The lateral path error is determined as the lateral distance between the centre of the front of the VUT and the centre of the rear of the GVT when measured in parallel to the intended straight lined path as shown in the figure below. Lateral path error = Y_{VUT} error + Y_{GVT} error  Figure 2: Lateral path error	3.10.3.3 受驗車輛側向偏移量 3.10.3.3.1 側向偏移量（lateral path error）之定義為受驗車輛前方中心與全球目標車後方中心，其與欲達成之直線路徑平行測量時所得到側向距離，如下圖所示。 側向偏移量＝Y_{VUT} 誤差＋Y_{GVT} 誤差 (請參末頁圖示)	3.10.2.2 側向偏移量 3.10.2.2.1 側向偏移量（lateral path error）之定義為受驗車輛前方中心與全球目標車後方中心，其與欲達成之直線路徑平行測量時所得到側向距離，如下圖所示。 側向偏移量＝Y_{VUT} 誤差＋Y_{GVT} 誤差 (請參末頁圖示)
3.4 Lateral overlap 3.4.1 The lateral overlap is defined as a percentage of the width of the VUT overlapping the GVT, where the reference line for the overlap definition	**3.3 Lateral overlap** 3.3.1 The lateral overlap is defined as a percentage of the width of the VUT overlapping the GVT, where the reference line for the overlap definition	3.10.3.4 側向重疊 3.10.3.4.1 側向重疊之定義為受驗車輛的寬度與全球目標車重疊的百分比，其中重疊定義之參考線為受驗車輛之中心線。在 100%重疊的情況下，	3.10.2.3 側向重疊 3.10.2.3.1 側向重疊之定義為受驗車輛的寬度與全球目標車重疊的百分比，其中重疊定義之參考線為受驗車輛之中心線。在 100%重疊的情況下，

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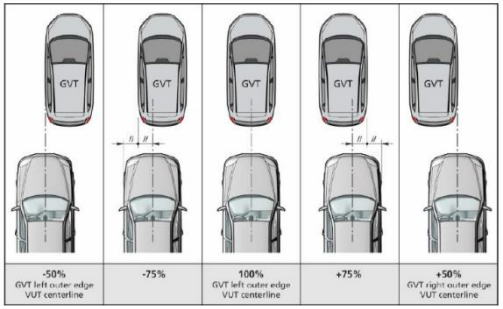
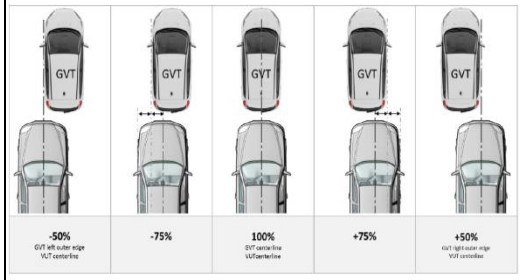
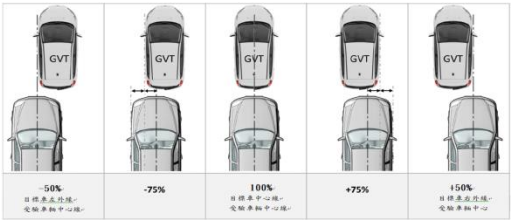
is the centreline of the VUT. In case of 100% overlap, the centrelines of the VUT and GVT are aligned.  Figure 3-3: Lateral Overlap examples **3.5 Profiles for impact speed determination** 3.5.1 A virtual profiled line is defined around the front end of the VUT. This line is defined by straight line segments connecting seven points that are equally distributed over the vehicle width minus 50mm on each side. The theoretical x,y coordinates are provided by the OEMs and verified by the test laboratory.	is the centerline of the VUT. In case of 100% overlap, the centerlines of the VUT and GVT are aligned.  Figure 3: Lateral Overlap examples	受驗車輛與全球目標車的中心線對齊。  圖 4:側向重疊範例 3.10.3.5 碰撞速度之標示線 3.10.3.5.1 受驗車輛之車頭有虛擬標示線。此標示線由車寬最外緣兩側處各減 50mm，並由平均劃分之七條平行線與車頭碰觸處連接而成。x,y 座標理論值應由車輛業者提供，由檢測機構驗證。	受驗車輛與全球目標車的中心線對齊。  圖 3:側向重疊範例

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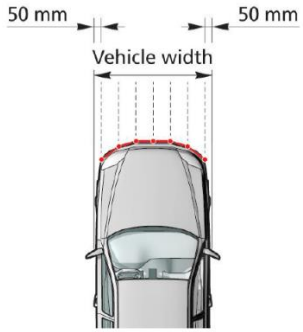 Figure 3-4 VUT Front bumper profile		(請參末頁圖示)	
4 MEASURING EQUIPMENT 4.1.1 Sample and record all dynamic data at a frequency of at least 100Hz. Synchronise using the DGPS time stamp the GVT data with that of the VUT. **4.2 Measurements and Variables** 4.2.1 Time T •T_0, time of test start. T_0 Unless otherwise stated T_0 = TTC 4s •Scenarios involving steering: T_0 is 1s. before T_{steer} •T_{AEB}, time where AEB T_{AEB}	**4 MEASURING EQUIPMENT** 4.1.1 Sample and record all dynamic data at a frequency of at least 100Hz. Synchronise using the DGPS time stamp the GVT data with that of the VUT. **4.2 Measurements and Variables** 4.2.1 Time T •CCRs and CCRm: T_0 equals TTC = 4s T_0 (CCRb: T_0 when GVT starts deceleratin •T_{AEB}, time where AEB T_{AEB}	3.10.4 量測配備 3.10.4.1 所有動態數據之採樣及記錄頻率不得低於 100Hz。使用差分全球定位系統時間標記（DGPS time stamp）將全球目標車數據與受驗車輛數據同步。 3.10.4.2 量測與變數 3.10.4.2.1 時間 T (1) 測試開始時間。除另有要求否則T_0等於碰撞時間4s T_0 包含轉向情境: 在T_{steer}之前T_0為1s (2) 緊急煞車輔助系統啟動 T_{AEB}	3.10.3 量測配備 3.10.3.1 所有動態數據之採樣及記錄頻率不得低於 100Hz。使用差分全球定位系統時間標記（DGPS time stamp）將全球目標車數據與受驗車輛數據同步。 3.10.3.2 量測與變數 3.10.3.2.1 時間 T (1) 前車靜止與前車移動: T_0 等於碰撞時間 = 4s T_0 （前車煞車: T_0為全球目標車開始減速） (2) 緊急煞車輔助系統啟動 T_{AEB}

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activates		activates		時間		時間	
•T_{FCW}, time where FCW activates	T_{FCW}	•T_{FCW}, time where FCW activates	T_{FCW}	(3) 前方碰撞預警系統啟動時間	T_{FCW}	(3) 前方碰撞預警系統啟動時間	T_{FCW}
•T_{impact}, time where VUT impacts GVT	T_{impact}	•T_{impact}, time where VUT impacts GVT	T_{impact}	(4) 受驗車輛碰撞全球目標車之時間	T_{impact}	(4) 受驗車輛碰撞全球目標車之時間	T_{impact}
•T_{steer}, time where VUT enters in curve segment	T_{steer}			(5) 受驗車輛進入曲線段之時間	T_{steer}		
•$T_{GVT\_deceleration\_start}$, time where GVT starts decelerating (deceleration to be reached in 1.0 seconds)	$T_{GVT\_deceleration\_start}$			(6) 全球目標車開始減速之時間(1秒內達到減速)	$T_{GVT\_deceleration\_start}$		
•T_{Start}, time where VUT starts moving (iFn CCCscp start from stop scenario)	T_{Start}			(7) 受驗車輛開始移動之時間(直行交匯路徑情境試驗從靜止狀態開始)	T_{Start}		
•T_{End}, time where VUT has travelled 2.9m. from the start position (in CCCscp start from stop scenario)	T_{End}			(8) 受驗車輛從開始位置行駛2.9m之時間(直行交匯路徑情境試驗從靜止狀態開始)	T_{End}		
•T_{Avg}, average time value of T_{End} from all the executed trials (in CCCscp start from stop scenario)	T_{Avg}			(9) 所有試驗之T_{End}之平均值(直行交匯路徑情境試驗從靜止狀態開始)	T_{Avg}		
4.2.2 Position of the VUT during the entire test	X_{VUT}, Y_{VUT}	4.2.2 Position of the VUT during the entire test	X_{VUT}, Y_{VUT}	3.10.4.2.2 試驗過程中受驗車輛之位置	X_{VUT} Y_{VUT}	3.10.3.2.2 試驗過程中受驗車輛之位置	X_{VUT} Y_{VUT}

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4.2.3 Position of the GVT during the entire test	X_{GVT}, Y_{GVT}	4.2.3 Position of the GVT during the entire test	X_{GVT}, Y_{GVT}	3.10.4.2.3 試驗過程中全球目標車之位置	X_{GVT} Y_{GVT}	3.10.3.2.3 試驗過程中全球目標車之位置	X_{GVT} Y_{GVT}
4.2.4 Speed of the VUT during the entire test	V_{VUT}	4.2.4 Speed of the VUT during the entire test	V_{VUT}	3.10.4.2.4 試驗過程中受驗車輛之速度	V_{VUT}	3.10.3.2.4 試驗過程中受驗車輛之速度	V_{VUT}
•V_{impact}, speed when VUT impacts GVT	V_{impact}	•V_{impact}, speed when VUT impacts GVT	V_{impact}	(1) 碰撞速度：受驗車輛碰撞全球目標車時的速度	V_{impact}	(1) 碰撞速度：受驗車輛碰撞全球目標車時的速度	V_{impact}
•V_{rel_impact}, relative speed when VUT impacts GVT	V_{rel_impact}	•$V_{rel,impact,}$ relative speed when VUT impacts GVT	$V_{rel,impact}$	(2) 碰撞相對速度：受驗車輛碰撞全球目標車時之相對速度	$V_{rel,impact}$	(2) 碰撞相對速度：受驗車輛碰撞全球目標車時之相對速度	$V_{rel,impact}$
4.2.5 Speed of the GVT during the entire test	V_{GVT}	4.2.5 Speed of the GVT during the entire test	V_{GVT}	3.10.4.2.5 試驗過程中全球目標車之速度	V_{GVT}	3.10.3.2.5 試驗過程中全球目標車之速度	V_{GVT}
4.2.6 Yaw velocity of the VUT during the entire test	$\dot{\psi}_{VUT}$	4.2.6 Yaw velocity of the VUT during the entire test	ψ_{VUT}	3.10.4.2.6 試驗過程中受驗車輛之橫擺角速度	$\dot{\psi}_{VUT}$	3.10.3.2.6 試驗過程中受驗車輛之橫擺角速度	ψ_{VUT}
4.2.7 Yaw velocity of the GVT during the entire test	$\dot{\psi}_{GVT}$	4.2.7 Yaw velocity of the GVT during the entire test	ψ_{GVT}	3.10.4.2.7 試驗過程中全球目標車之橫擺角速度	$\dot{\psi}_{GVT}$	3.10.3.2.7 試驗過程中全球目標車之橫擺角速度	ψ_{GVT}
4.2.8 Acceleration of the VUT during the entire test	A_{VUT}	4.2.8 Acceleration of the VUT during the entire test	A_{VUT}	3.10.4.2.8 試驗過程中受驗車輛之加速度	A_{VUT}	3.10.3.2.8 試驗過程中受驗車輛之加速度	A_{VUT}
4.2.9 Acceleration of the GVT during the entire test	A_{GVT}	4.2.9 Acceleration of the GVT during the entire test	A_{GVT}	3.10.4.2.9 試驗過程中全球目標車之加速度	A_{GVT}	3.10.3.2.9 試驗過程中全球目標車之加速度	A_{GVT}
4.2.10 Steering wheel velocity of the VUT during the entire test	Ω_{VUT}			3.10.4.2.10 試驗過程中受驗車輛之方向盤轉速	Ω_{VUT}		
4.3 Measuring Equipment		**4.3 Measuring Equipment**		3.10.4.3 量測配備精度		3.10.3.3 量測配備精度	
4.3.1 Equip the VUT and GVT with data		4.3.1 Equip the VUT and GVT with data		3.10.4.3.1 受驗車輛與全球目標車應配		3.10.3.3.1 受驗車輛與全球目標車應配	

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measurement and acquisition equipment to sample and record data with an accuracy of at least: •VUT and GVT speed to 0.1km/h; •VUT and GVT lateral and longitudinal position to 0.03m; •VUT heading angle to 0.1°; •VUT and GVT yaw rate to 0.1°/s; •VUT and GVT longitudinal acceleration to 0.1m/s^2; •VUT steering wheel velocity to 1.0 °/s.	measurement and acquisition equipment to sample and record data with an accuracy of at least: •VUT and GVT speed to 0.1km/h; •VUT and GVT lateral and longitudinal position to 0.03m; •VUT and GVT yaw rate to 0.1°/s; •VUT and GVT longitudinal acceleration to 0.1m/s^2; •VUT steering wheel velocity to 1.0 °/s.	備數據量測與採集配備，用以抽樣及記錄數據，其精準度最低要求如下： (1) 受驗車輛與全球目標車速度：0.1km/h (2) 受驗車輛與全球目標車之橫向及縱向位置：0.03m (3) 受驗車輛航向角：0.1° (4) 受驗車輛與全球目標車橫擺角速度：0.1°/s (5) 受驗車輛與全球目標車縱向加速度：0.1m/s^2 (6) 受驗車輛方向盤轉速：1.0 °/s	備數據量測與採集配備，用以抽樣及記錄數據，其精準度最低要求如下： (1) 受驗車輛與全球目標車速度：0.1km/h (2) 受驗車輛與全球目標車之橫向及縱向位置：0.03m (3) 受驗車輛與全球目標車橫擺角速度：0.1°/s (4) 受驗車輛與全球目標車縱向加速度：0.1m/s^2 (5) 受驗車輛方向盤轉速：1.0 °/s
4.4 Data Filtering	**4.4 Data Filtering**	3.10.4.4 數據濾波	3.10.3.4 數據濾波
4.4.1 Filter the measured data as follows:	4.4.1 Filter the measured data as follows:	3.10.4.4.1 依據下列原則對量測所得數據進行濾波：	3.10.3.4.1 依據下列原則對量測所得數據進行濾波：
4.4.1.1 Position and speed are not filtered and are used in their raw state.	4.4.1.1 Position and speed are not filtered and are used in their raw state.	3.10.4.4.1.1 位置與速度不需濾波，直接使用原始數據。	3.10.3.4.1.1 位置與速度不需濾波，直接使用原始數據。
4.4.1.2 Acceleration, yaw rate, steering wheel velocity and force are filtered with a 12-pole phaseless Butterworth filter with a cut off frequency of 10Hz.	4.4.1.2 Acceleration, yaw rate, steering wheel velocity and force are filtered with a 12-pole phaseless Butterworth filter with a cut off frequency of 10Hz.	3.10.4.4.1.2 加速度、橫擺角速度、方向盤速度及力度由 12-pole phaseless 巴特沃斯濾波器(Butterworth filter)及 10Hz 之截止頻率進行濾波。	3.10.3.4.1.2 加速度、橫擺角速度、方向盤速度及力度由 12-pole phaseless 巴特沃斯濾波器(Butterworth filter)及 10Hz 之截止頻率進行濾波。
5 GLOBAL VEHICLE TARGET	**5 GLOBAL VEHICLE TARGET**	3.10.5 全球目標車	3.10.4 全球目標車

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5.1 Specification 5.1.1 Conduct the tests in this protocol using the Global Vehicle Target (GVT) as shown in Figure 5-1 below. The GVT replicates the visual, radar and LIDAR attributes of a typical M1 passenger vehicle.  Figure 5-1: Global Vehicle Target (GVT) 5.1.2 To ensure repeatable results the combination of the propulsion system and GVT must meet the requirements as detailed in ISO 19206-3:2021.	**5.1 Specification** 5.1.1 Conduct the tests in this protocol using the Global Vehicle Target (GVT) as shown in Figure 3 below. The GVT replicates the visual, radar and LIDAR attributes of a typical M1 passenger vehicle.  Figure 3: Global Vehicle Target (GVT)	3.10.5.1 規格 3.10.5.1.1 進行試驗時，應使用全球目標車（GVT），如圖 6 所示。全球目標車模擬一般 M_1 類小客車之光學儀器、雷達、光達（LIDAR）功能。  圖 6：全球目標車 3.10.5.1.2 為確保試驗結果之再現性，推進系統及全球目標車應符合 ISO 19206-3:2021。	3.10.4.1 規格 3.10.4.1.1 進行試驗時，應使用全球目標車（GVT），如圖 4 所示。全球目標車模擬一般 M_1 類小客車之光學儀器、雷達、光達（LIDAR）功能。  圖 4：全球目標車

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5.1.3 Only equipment listed in the current version of TB029 – Suppliers List may be used for testing. The current version can be found on the Euro NCAP website.		3.10.5.1.3 僅最新版 Euro NCAP TB029(供應商清單)中列出之配備，才可用於試驗。	
5.1.4 The GVT is designed to work with the following types of sensors: •Radar (24 and 77 GHz) •LIDAR •Camera When a manufacturer believes that the GVT is not suitable for another type of sensor system used by the VUT but not listed above, the manufacturer is asked to contact the Euro NCAP Secretariat.	5.1.2 The GVT is designed to work with the following types of sensors: •Radar (24 and 77 GHz) • LIDAR • Camera When a manufacturer believes that the GVT is not suitable for another type of sensor system used by the VUT but not listed above, the manufacturer is asked to contact the Euro NCAP Secretariat.	3.10.5.1.4 全球目標車應能辨識下列型式之感測器： (1) 雷達（24 與 77 GHz） (2) 光達 (3) 攝影機 如車輛業者認為受驗車輛裝設非上述所提及型式之感測器系統且不適用於全球目標車時，則車輛業者應與 TNCAP 執行機構聯繫。	3.10.4.1.2 全球目標車應能辨識下列型式之感測器： (1) 雷達（24 與 77 GHz） (2) 光達 (3) 攝影機 如車輛業者認為受驗車輛裝設非上述所提及型式之感測器系統且不適用於全球目標車時，則車輛業者應與 TNCAP 執行機構聯繫。
6 MANUFACTURER DATA	**6 MANUFACTURER DATA**	3.10.6 車輛業者數據	3.10.5 車輛業者數據
6.1 Manufacturer Supplied Data	**6.1 Manufacturer Supplied Data**	3.10.6.1 車輛業者提供數據	3.10.5.1 車輛業者提供數據
6.1.1 The vehicle manufacturer is required to provide the Euro NCAP Secretariat with colour data (expected impact speeds are not required) detailing the performance of the vehicle in the CCRs and CCRm	6.1.1 The vehicle manufacturer is required to provide the Euro NCAP Secretariat with colour data (expected impact speeds are not required) detailing the performance of the vehicle in the CCRs and CCRm	3.10.6.1.1 車輛業者應向 TNCAP 執行機構提供顏色數據(不需要提供預期的碰撞速度)，應詳細說明 CCRs 與 CCRm 情境中車輛的性能，以確定所有重疊與碰撞速度組合。應對 AEB 與 FCW 系統試驗進行預測（若適	3.10.5.1.1 車輛業者應向 TNCAP 執行機構提供顏色數據(不需要提供預期的碰撞速度)，應詳細說明 CCRs 與 CCRm 情境中車輛的性能，以確定所有重疊與碰撞速度組合。應對 AEB 與 FCW 系統試驗進行預測（若適

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scenarios for all overlap and impact speed combinations. The prediction is to be done for both AEB and FCW system tests where applicable.	scenarios for all overlap and impact speed combinations. The prediction is to be done for both AEB and FCW system tests where applicable.	用）。	用）。
6.1.2 All data must be supplied by the manufacturer before any testing begins, preferably with delivery of the test vehicle(s).	6.1.2 All data must be supplied by the manufacturer before any testing begins, preferably with delivery of the test vehicle(s).	3.10.6.1.2 車輛業者應於任一試驗開始前，提供受驗車輛所有數據。	3.10.5.1.2 車輛業者應於任一試驗開始前，提供受驗車輛所有數據。
6.1.3 Data shall be provided for each grid point for CCRs (10-50km/h for AEB and 55-80km/h for FCW) and CCRm (30-80km/h for AEB) according to the colour scheme detail in the Euro NCAP Assessment Protocol – Safety Assist Section 4.3.2.	6.1.3 Data shall be provided for each grid point according to the following colour scheme for AEB City (CCRs 10-50km/h) and for AEB Inter-Urban (CCRs 30-80km/h & CCRm 30-80km/h):	3.10.6.1.3 依據安全輔助 2.4.3.3.3 節 CCRs（AEB 10-50km /h 與 FCW 55-80 km /h）及 CCRm（AEB 30-80km / h）的顏色方案，應提供每一網格點之數據。	3.10.5.1.3 依據 AEB City（CCRs 10-50km /h）及 AEB Inter-Urban（CCRs 30-80km /h 與 CCRm 30-80km / h）的顏色方案，應提供每一網格點之數據：

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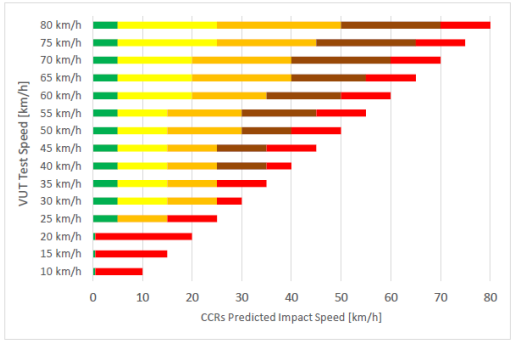
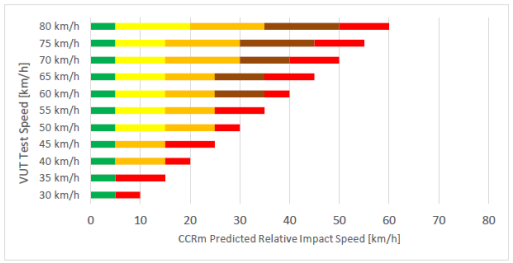
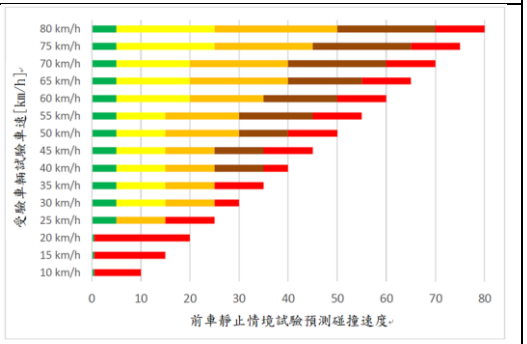
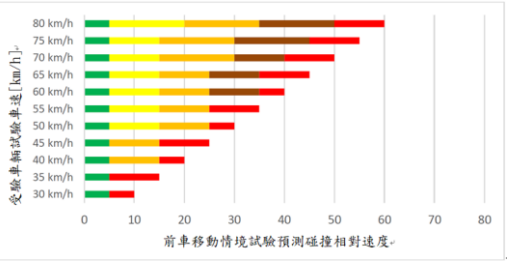
6.1.4 The vehicle manufacturer is required to provide the Euro NCAP Secretariat with data detailing the performance of the vehicle in the CCCscp scenario for all test speed combinations. The prediction is to be provided for both AEB and FCW system tests where applicable. Where predictions state insufficient performance to score points, the tests will not be performed.	 	3.10.6.1.4 車輛業者應向 TNCAP 執行機構提供直行交匯路徑情境試驗之所有試驗速度性能數據，若適用，將為 AEB 及 FCW 系統試驗提供預測，若預測結果不足以得分則不會進行試驗。	 

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6.1.5 For the Car-to-Car head-on scenarios the vehicle manufacturer must supply a dossier detailing how their vehicle responds in the CCFhol and CCFhos test scenarios. The dossier must, at least, include:		3.10.6.1.5 對於前方對向來車情境，車輛業者應提供車輛於前方對向來車直行情境試驗及前方對向來車變換車道情境試驗之系統反應資料，資料應至少包含	
•System performance: The expected performance of the system (TTC of warning – when applicable – , TTC of AEB activation and speed reduction)		(1) 系統預期性能:(警示之碰撞時間-若適用、AEB 觸發及減速之碰撞時間)	
•System architecture: Sensor(s) setup used in perception and basic description of sensor fusion and decision-making logic		(2) 系統架構:感測器設定、感測器融合及決策邏輯之基本描述	
•System operational conditions/limitations (ODD): system activation speed range, maximum relative speed, overlap range, lighting/environmental conditions, considered vehicle types (passenger car		(3) 系統作動條件/限制(ODD):系統作動速度範圍、最大相對速度、重疊範圍、照度/環境條件、系統可反應之車輛類型(僅限客車或機車、大貨車等)、所需車道寬度、所需車道標線等	

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only or motorcycle, truck, etc), required lane width(s), required lane marking, etc. •System overriding conditions: e.g., accelerator pedal %, brake pedal, steering wheel angle/rate, etc. •System validation: Evidence of system verification conducted by OEM (physical tests, HiL/SiL/ViL…) •Real world performance: Evidence from the vehicle manufacturer demonstrating the effectiveness of the head-on function on the field (including false positive likelihood & mitigation strategies)		(4) 凌駕系統條件 (overriding conditions): 如加速踏板踩踏程度、煞車踏板踩踏程度、方向盤轉動角度/速率等 (5) 系統驗證:車輛業者執行系統驗證之證明資料(物理測試、硬體測試、軟體測試、模擬測試) (6) 實際性能:車輛業者提供對向來車功能於實際道路之有效性佐證資料(包含誤作動可能性及減緩碰撞對策)	
6.2 Absence of Manufacturer Data 6.2.1 Where predicted data is NOT provided by the vehicle manufacturer, ALL grid points are to be tested by the	**6.2 Absence of Manufacturer Data** 6.2.1 Where predicted data is NOT provided by the vehicle manufacturer, ALL grid points are to be tested by the	3.10.6.2 車輛業者未提供數據 3.10.6.2.1 若未提供預測數據，車輛業者得自費對所有網格點進行試驗，否則本項不予計分。(直行交匯路徑情	3.10.5.2 車輛業者未提供數據 3.10.5.2.1 若未提供預測數據，車輛業者得自費對所有網格點進行試驗，否則本項不予計分。

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Euro NCAP laboratory, taking into account symmetry (except for CCCscp Start From Stop setup, where only farside is tested). 6.2.1.1 For CCR AEB and FCW systems tests, when there is complete avoidance, the subsequent test speed for the next test is incremented with 10km/h. When there is contact, first perform a test at a test speed 5km/h less than the test speed where contact occurred. After this test continue to perform the remainder of the tests with speed increments of 5km/h by repeating section 8.3.1 to8.3.3. Stop testing when the speed reduction seen in the test is less than 5 km/h or the (relative) impact speed is more than 50 km/h. 6.2.1.2 For CCCscp tests should be performed starting with the lowest VUT and GVT speed combination. The next test will use the same VUT test	Euro NCAP laboratory, taking into account symmetry.	境試驗靜止狀態啟動設定除外，僅遠端(farside)進行試驗) 3.10.6.2.2 執行前車情境之緊急煞車輔助系統及前方碰撞預警系統試驗時，若未發生碰撞，則下一次的試驗速度應增加 10 km/h。若發生碰撞，則以發生碰撞之試驗速度減 5km/h 進行試驗。此次試驗後，繼續再以 5 km/h 之遞增速度進行後續的試驗，重複條文 3.10.8.3.1 至 3.10.8.3.3 之步驟。試驗中速度減低量低於 5 km/h 或(相對)碰撞速度大於 50km/h 時停止試驗。(對照第二版條文 3.10.5.2.2.1) 3.10.6.2.3 執行直行交匯路徑情境試驗時，應從最低受驗車輛及全球目標車之速度組合開始，下一次試驗以相同受驗車輛速度、全球目標車速度增加	

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speed and the GVT speed will be incremented by 10km/h. Where the GVT test speed reaches 60km/h, the next test will be the combination of the VUT speed increased to the next increment, and a GVT speed of 10km/h. Continue this method for all VUT test speeds.		10km/h 進行。當全球目標車速度達到 60km/h 時，下一次試驗以受驗車輛速度增加到下一個增量及全球目標車速度增加 10km/h 進行，對於所有受驗車輛之試驗速度皆使用此方式。	
	6.2.2 A system can consist of a combined AEB and FCW function or separate AEB or FCW functions. For combined systems, both sections 6.2.2.1 and 6.2.2.2 apply. Where the functions are separate, section 6.2.2.1 applies to the AEB function and 6.2.2.2 applies to the FCW.		3.10.5.2.2 緊急煞車輔助系統與前方碰撞預警系統可整合功能成一整合系統，或是緊急煞車輔助系統或前方碰撞預警系統之功能各自獨立。整合系統應符合條文 3.10.5.2.2.1 與 3.10.5.2.2.2 之規定。若為獨立系統者，緊急煞車輔助系統之測試程序應符合條文 3.10.5.2.2.1 之規定，另前方碰撞預警系統測試程序應符合條文 3.10.5.2.2.2 之規定。

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	6.2.2.1 For AEB systems tests, when there is complete avoidance, the subsequent test speed for the next test is incremented with 10km/h. When there is contact, first perform a test at a test speed 5km/h less than the test speed where contact occurred. After this test continue to perform the remainder of the tests with speed increments of 5km/h by repeating section 8.3.1 to 8.4.3. Stop testing when the speed reduction seen in the test is less than 5 km/h.		3.10.5.2.2.1 執行緊急煞車輔助系統試驗時，若未發生碰撞，則下一次的試驗速度應增加 10 km/h。若發生碰撞，則以發生碰撞之試驗速度減 5km/h 進行試驗。此次試驗後，繼續再以 5 km/h 之遞增速度進行後續的試驗，重複條文 3.10.7.3.1 至 3.10.7.4.3 之步驟。試驗中速度減低量低於 5 km/h 時停止試驗。
	6.2.2.2 For FCW system tests, when there is complete avoidance, the subsequent test speed for the next test is incremented by 10km/h. When there is contact, first perform a test at a test speed 5km/h less than the test speed where contact occurred. After this test continue to perform the remainder of the tests with speed increments of 5km/h by repeating section 8.3.1 to 8.4.3. In the AEB Inter-Urban CCRm		3.10.5.2.2.2 執行前方碰撞預警系統試驗時，若未發生碰撞，則下一項試驗速度應增加 10km/h。若有發生碰撞，則以發生碰撞之試驗速度減 5km/h 進行試驗。此次試驗後，繼續再以 5km/h 之遞增速度進行後續的試驗，重複條文 3.10.7.3.1 至 3.10.7.4.3 之步驟。緊急煞車輔助之快速道路系統之前車移動情境試驗與前車煞車情境試驗中，僅需以緊急煞車輔助系統試驗中

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	and CCRb scenarios, only perform tests at the test speeds where there was no avoidance in the AEB function tests, where applicable. Stop testing when the speed reduction seen in the test is less than 5 km/h or the relative impact speed is more than 50 km/h.		有發生碰撞的速度進行試驗即可(如適用)。試驗中車速減低量低於 5km/h 或碰撞相對速度高於 50km/h，即停止試驗。
7 TEST CONDITIONS **7.1 Test Track** 7.1.1 Conduct tests on a dry (no visible moisture on the surface), uniform, solid-paved surface with a consistent slope between level and 1%. The test surface shall have a minimal peak braking coefficient (PBC) of 0.9. 7.1.2 The surface must be paved and may not contain irregularities (e.g. large dips or cracks, manhole covers or reflective studs) that may give rise to abnormal sensor measurements within a lateral distance of 5.0m to either side of the test path and with a longitudinal distance of 20m ahead of the VUT when the test ends.	**7 TEST CONDITIONS** **7.1 Test Track** 7.1.1 Conduct tests on a dry (no visible moisture on the surface), uniform, solid-paved surface with a consistent slope between level and 1%. The test surface shall have a minimal peak braking coefficient (PBC) of 0.9. 7.1.2 The surface must be paved and may not contain any irregularities (e.g. large dips or cracks, manhole covers or reflective studs) that may give rise to abnormal sensor measurements within a lateral distance of 3.0m to either side of the test path and with a longitudinal distance of 30m ahead of the VUT when the test ends.	3.10.7 試驗條件 3.10.7.1 試驗道路 3.10.7.1.1 試驗道路應乾燥（試驗路面無明顯可見之水分）、平整、固態鋪設之路面，坡度應介於水平至 1%之間。試驗路面之最高煞車係數(PBC)應大於等於 0.9。 3.10.7.1.2 試驗道路應為鋪設路面，試驗路徑兩側 5.0m 內及試驗結束時受驗車輛前方 20m 內，不得有可能造成感測器偵測異常之不平整處（如：驟降斜坡、裂縫、人孔蓋或反光路釘）。	3.10.6 試驗條件 3.10.6.1 試驗道路 3.10.6.1.1 試驗道路應乾燥（試驗路面無明顯可見之水分）、平整、固態鋪設之路面，坡度應介於水平至 1%之間。試驗路面之最高煞車係數(PBC)應大於等於 0.9。 3.10.6.1.2 試驗道路應為鋪設路面，試驗路徑兩側 3.0m 內及試驗結束時受驗車輛前方 30m 內，不得有任何可能造成感測器偵測異常之不平整處（如：驟降斜坡、裂縫、人孔蓋或反光路釘）。

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7.1.3 The presence of lane markings is allowed for CCR tests. However, testing may only be conducted in an area where typical road markings depicting a driving lane may not be parallel to the test path within 3.0m either side. Lines or markings may cross the test path but may not be present in the area where AEB activation and/or braking after FCW is expected.	7.1.3 The presence of lane markings is allowed. However testing may only be conducted in an area where typical road markings depicting a driving lane may not be parallel to the test path within 3.0m either side. Lines or markings may cross the test path, but may not be present in the area where AEB activation and/or braking after FCW is expected.	3.10.7.1.3 試驗道路可設有前車試驗之車道標線。然而，試驗路徑兩側 3.0m 內不得有平行於路徑之一般車道標線。指示線或標線可以通過試驗路徑，但不得出現於預計會觸發緊急煞車輔助系統，及/或前方碰撞預警系統作動後之煞車處。	3.10.6.1.3 試驗道路可設有車道標線。然而，試驗路徑兩側 3.0m 內不得有平行於路徑之一般車道標線。指示線或標線可以通過試驗路徑，但不得出現於預計會觸發緊急煞車輔助系統，及/或前方碰撞預警系統作動後之煞車處。
7.1.4 Junction and Lane Markings 7.1.4.1 The CCFtap and CCCscp tests described in this document requires the use of a junction. The main approach lane where the VUT and GVT paths start, (horizontal lanes in Figure 7-1) will have a width of 3.5m. The side lane (vertical lanes in Figure 7-1) will have a width of 3.25 to 3.5m. The lane markings on these lanes need to		3.10.7.1.4 道路交匯處(Junction)與車道標線 3.10.7.1.4.1CCFtap 與 CCCscp 試驗需使用道路交匯處。受驗車輛與全球目標車開始試驗之主車道(圖 7 之水平車道)及側車道(圖 7 之垂直車道)寬度不得小於 3m：	

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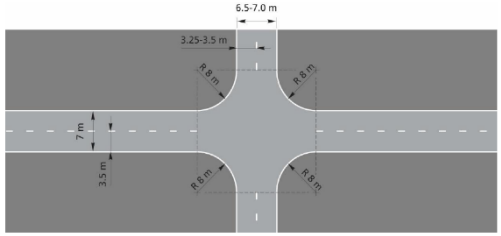
conform to one of the lane markings as defined in UNECE Regulation 130: 1. Dashed line starting at the same point where the radius transitions into a straight line with a width between 0.10 and 0.15m 2. Solid line with a width between 0.10 and 0.25m 3. Junction without any central markings  Figure 7-1: Layout of junction and the connecting lanes		(1) 白虛線起始點應同外側標線半徑轉換為車道直線標線處，線寬為10cm。應使用線段長 4m，間距6m。 (2) 路面邊緣應使用白實線，線寬為15cm。 (3) 無任何中心標線之道路交匯處。 (請參末頁圖示)	
7.2 Weather Conditions	**7.2 Weather Conditions**	3.10.7.2 天氣條件	3.10.6.2 天氣條件
7.2.1 Conduct tests in dry conditions with ambient temperature above 5°C and below 40°C.	7.2.1 Conduct tests in dry conditions with ambient temperature above 5°C and below 40°C.	3.10.7.2.1 試驗應於環境溫度 5°C 至 40°C 間之乾燥環境進行。	3.10.6.2.1 試驗應於環境溫度 5°C 至 40°C 間之乾燥環境進行。
7.2.2 No precipitation shall be falling and horizontal visibility at ground level	7.2.2 No precipitation shall be falling and horizontal visibility at ground level	3.10.7.2.2 降雨時不得進行試驗，且地面水平能見度應大於 1km。風速應小	3.10.6.2.2 降雨時不得進行試驗，且地面水平能見度應大於 1km。風速應小

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shall be greater than 1km. Wind speeds shall be below 10m/s to minimise GVT and VUT disturbance.	shall be greater than 1km. Wind speeds shall be below 10m/s to minimise GVT and VUT disturbance.	於 10m/s，以使全球目標車與受驗車輛干擾應降至最低。	於 10m/s，以使全球目標車與受驗車輛干擾應降至最低。
7.2.3 Natural ambient illumination must be homogenous in the test area and in excess of 2000 lux for daylight testing with no strong shadows cast across the test area other than those caused by the VUT or GVT. Ensure testing is not performed driving towards, or away from the sun when there is direct sunlight.	7.2.3 Natural ambient illumination must be homogenous in the test area and in excess of 2000 lux for daylight testing with no strong shadows cast across the test area other than those caused by the VUT or GVT. Ensure testing is not performed driving towards, or away from the sun when there is direct sunlight.	3.10.7.2.3 試驗區域的自然光線應均勻照射，白天試驗時照度應高於2000lux，且除了受驗車輛與全球目標車之陰影外，不得有其他陰影籠罩試驗區域。試驗時應確保車輛行進方向非直接朝向或背向陽光之照射方向。	3.10.6.2.3 試驗區域的自然光線應均勻照射，白天試驗時照度應高於2000lux，且除了受驗車輛與全球目標車之陰影外，不得有其他陰影籠罩試驗區域。試驗時應確保車輛行進方向非直接朝向或背向陽光之照射方向。
7.2.4 Measure and record the following parameters preferably at the commencement of every single test or at least every 30 minutes: a) Ambient temperature in °C; b) Track Temperature in °C; c) Wind speed and direction in m/s; d) Ambient illumination in Lux.	7.2.4 Measure and record the following parameters preferably at the commencement of every single test or at least every 30 minutes: a) Ambient temperature in °C; b) Track Temperature in °C; c) Wind speed and direction in m/s; d) Ambient illumination in Lux.	3.10.7.2.4 應於每次試驗開始前或至少每隔 30 分鐘，測量及記錄以下參數： (1) 現場環境溫度，以攝氏記錄； (2) 路面溫度，以攝氏記錄； (3) 風速與風向，以m/s記錄； (4) 環境照度，以lux記錄。	3.10.6.2.4 應於每次試驗開始前或至少每隔 30 分鐘，測量及記錄以下參數： (1) 現場環境溫度，以攝氏記錄； (2) 路面溫度，以攝氏記錄； (3) 風速與風向，以m/s記錄； (4) 環境照度，以 lux 記錄。
7.3 Surroundings	**7.3 Surroundings**	3.10.7.3 試驗環境	3.10.6.3 試驗環境
7.3.1 Conduct testing such that there are	7.3.1 Conduct testing such that there are	3.10.7.3.1 從 T_0 開始試驗期間及試驗	3.10.6.3.1 試驗時試驗路徑兩側 3.0m

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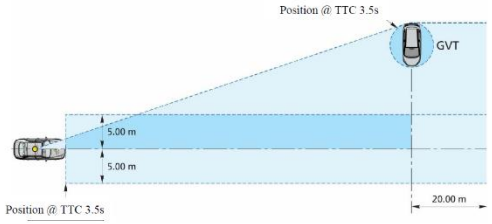
no other vehicles, highway infrastructure (except lighting columns during the low ambient lighting condition tests), obstructions, other objects or persons protruding above the test surface, that may give rise to abnormal sensor measurements during the full duration of the test starting at T_0 and within a longitudinal distance 20m ahead of the VUT when the test ends, within: - 5m either side of the VUT test path, - a circle around the GVT, and - the visual axis between the geometric centre of the VUT and the circle surrounding the GVT. - For CCCscp only, the above applies from TTC =3.5s (instead of T0).  Figure 7-3: Free space requirements – CCC Farside Test	no other vehicles, highway furniture, obstructions, other objects or persons protruding above the test surface that may give rise to abnormal sensor measurements within a lateral distance of 3.0m to either side of the test path and within a longitudinal distance of 30m ahead of the VUT when the test ends (Figure 4).	結束時受驗車輛前方 20m 內（如圖 8），應無其他車輛、高速公路設施（適用於低照度環境試驗期間之燈柱除外）、障礙物、其他物體或人員，以避免造成感測器偵測異常，包含以下範圍： (1) 受驗車輛試驗路徑兩側各5m。 (2) 全球目標車周圍圓形範圍。 (3) 受驗車輛幾何中心與全球目標車周圍圓形範圍之虛擬軸線。 (4) 僅適用於 CCCscp，上述從 TTC=3.5s (非T_0)起適用。 (請參末頁圖示)	內及試驗結束時受驗車輛前方 30m 內（如圖 5），應無其他車輛、高速公路設施（highway furniture）、障礙物、其他物體或人員，以避免造成感測器偵測異常。

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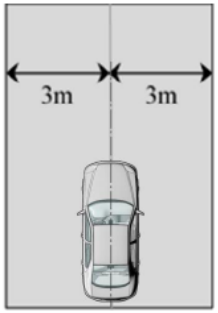
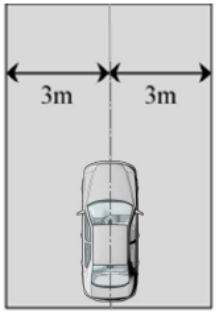
7.3.2 Test areas where the VUT needs to pass under overhead signs, bridges, gantries or other significant structures are not permitted.	7.3.2 Test areas where the VUT needs to pass under overhead signs, bridges, gantries or other significant structures are not permitted.  Figure 4: Free surroundings	3.10.7.3.2 試驗區域不得設置於受驗車輛會從標誌、橋樑、門架(gantries)，或其他大型建築物下方通過之場地。	3.10.6.3.2 試驗區域不得設置於受驗車輛會從標誌、橋樑、門架(gantries)，或其他大型建築物下方通過之場地。  圖5：空曠的環境
7.3.3 The general view ahead and to either side of the test area shall comprise of a wholly plain man made or natural environment (e.g. further test surface, plain coloured fencing or hoardings, natural vegetation or sky etc.) and must not comprise any highly reflective surfaces or contain any vehicle-like silhouettes that may give rise to abnormal sensor measurements.	7.3.3 The general view ahead and to either side of the test area shall comprise of a wholly plain man made or natural environment (e.g. further test surface, plain coloured fencing or hoardings, natural vegetation or sky etc.) and must not comprise any highly reflective surfaces or contain any vehicle-like silhouettes that may give rise to abnormal sensor measurements.	3.10.7.3.3 試驗區域前方與兩側之基本視野應為單純之人造建設或自然環境（如：測試路面的延伸、素色圍籬或圍牆、天然植被或天空等），且不得有高度反光表面或任何類似車輛之輪廓，以免造成感測器偵測異常。	3.10.6.3.3 試驗區域前方與兩側之基本視野應為單純之人造建設或自然環境（如：測試路面的延伸、素色圍籬或圍牆、天然植被或天空等），且不得有高度反光表面或任何類似車輛之輪廓，以免造成感測器偵測異常。

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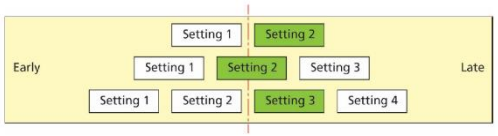
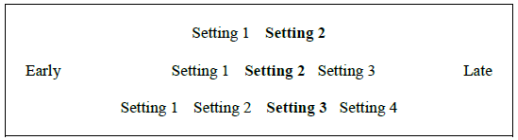
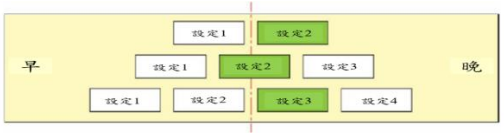
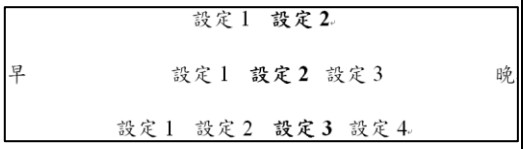
7.4 VUT Preparation 7.4.1 AEB and FCW System Settings 7.4.1.1 Set any driver configurable elements of the AEB and/or FCW system (e.g. the timing of the collision warning or the braking application if present) to the middle setting or midpoint and then next latest setting similar to the examples shown in Figure 7-2. When the vehicle is equipped with a Driver State Monitoring (DSM) which alters the AEB and/or FCW sensitivity according to the driver's state (e.g. distracted / attentive), this system shall be deactivated before the testing commences.  Figure 7-2: AEB and/or FCW system setting for testing	**7.4 VUT Preparation** 7.4.1 AEB and FCW System Settings 7.4.1.1 Set any driver configurable elements of the AEB and/or FCW system (e.g. the timing of the collision warning or the braking application if present) to the middle setting or midpoint and then next latest setting similar to the examples shown in Figure 5.  Figure 5: AEB and/or FCW system setting for testing	3.10.7.4受驗車輛整備 3.10.7.4.1 緊急煞車輔助系統與前方碰撞預警系統設定 3.10.7.4.1.1 緊急煞車輔助系統及/或前方碰撞預警系統之駕駛可調整設定選項（如：碰撞預警時機或煞車作動時機，若設置）調整至中段選項或距中間點位置但較晚發出警示之選項，如圖 9 所示。 若車輛配備駕駛狀態監測系統，該系統根據駕駛狀態（例如分心/專注）調整緊急煞車輔助系統及/或前方碰撞預警系統之靈敏度時，應於測試開始前停用該系統。  圖 9：緊急煞車輔助系統及/或前方碰撞預警系統試驗設定	3.10.6.4受驗車輛整備 3.10.6.4.1 緊急煞車輔助系統與前方碰撞預警系統設定 3.10.6.4.1.1 緊急煞車輔助系統及/或前方碰撞預警系統之駕駛可調整設定選項（如：碰撞預警時機或煞車作動時機，若設置）調整至中段選項或距中間點位置但較晚發出警示之選項，如圖 6 所示。  圖 6：緊急煞車輔助系統及/或前方碰撞預警系統試驗設定
7.4.2 Deployable Pedestrian/VRU	7.4.2 Deployable Pedestrian/VRU	3.10.7.4.2 開展式行人/弱勢道路使用	3.10.6.4.2 開展式行人/弱勢道路使用

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Protection Systems When the vehicle is equipped with a deployable pedestrian/VRU protection system, this system shall be deactivated before the testing commences.	Protection Systems When the vehicle is equipped with a deployable pedestrian/VRU protection system, this system shall be deactivated before the testing commences.	者保護系統（Deployable Pedestrian/VRU Protection Systems） 如受驗車輛配備其他開展式行人/弱勢道路使用者保護系統，試驗前應關閉上述保護系統。	者保護系統（Deployable Pedestrian/VRU Protection Systems） 如受驗車輛配備其他開展式行人/弱勢道路使用者保護系統，試驗前應關閉上述保護系統。
7.4.3 Tyres Perform the testing with new original fitment tyres of the make, model, size, speed and load rating as specified by the vehicle manufacturer. It is permitted to change the tyres which are supplied by the manufacturer or acquired at an official dealer representing the manufacturer if those tyres are identical make, model, size, speed and load rating to the original fitment. Inflate the tyres to the vehicle manufacturer's recommended cold tyre inflation pressure(s). Use inflation pressures corresponding to least loading normal condition.	7.4.3 Tyres Perform the testing with new original fitment tyres of the make, model, size, speed and load rating as specified by the vehicle manufacturer. It is permitted to change the tyres which are supplied by the manufacturer or acquired at an official dealer representing the manufacturer if those tyres are identical make, model, size, speed and load rating to the original fitment. Inflate the tyres to the vehicle manufacturer's recommended cold tyre inflation pressure(s). Use inflation pressures corresponding to least loading normal condition.	3.10.7.4.3輪胎 試驗應使用車輛業者指定之型式、尺寸、速度代號及載重能力指數之全新原廠輪胎。試驗時，可更換車輛業者或代理商所提供之輪胎，前提是新的輪胎應符合原廠規格之型式、尺寸、速度代號及載重能力指數。將輪胎充氣至車輛業者建議之冷胎胎壓。使用之輪胎胎壓應至少與一般負載狀態之胎壓（Loading normal condition）相同。	3.10.6.4.3輪胎 試驗應使用車輛業者指定之型式、尺寸、速度代號及載重能力指數之全新原廠輪胎。試驗時，可更換車輛業者或代理商所提供之輪胎，前提是新的輪胎應符合原廠規格之型式、尺寸、速度代號及載重能力指數。將輪胎充氣至車輛業者建議之冷胎胎壓。使用之輪胎胎壓應至少與一般負載狀態之胎壓（Loading normal condition）相同。
Run-in tyres according to the tyre conditioning procedure specified in 8.1.3. After running-in maintain the	Run-in tyres according to the tyre conditioning procedure specified in 8.1.2. After running-in maintain the	依 3.10.8.1.3 節進行輪胎磨合（run-in），磨合完畢之輪胎於整個試驗過程中應維持於車輛相同位置。	依 3.10.7.1.2 節進行輪胎磨合（run-in），磨合完畢之輪胎於整個試驗過程中應維持於車輛相同位置。

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run-in tyres in the same position on the vehicle for the duration of the testing.	run-in tyres in the same position on the vehicle for the duration of the testing.		
7.4.4 Wheel Alignment Measurement and Unladen Kerb Mass The vehicle should be subject to a vehicle (in-line) geometry check to record the wheel alignment set by the OEM. This should be done with the vehicle in kerb weight.	7.4.4 Wheel Alignment Measurement The vehicle should be subject to a vehicle (in-line) geometry check to record the wheel alignment set by the OEM. This should be done with the vehicle in kerb weight.	3.10.7.4.4 車輪定位測量（Wheel Alignment Measurement）及空車重量（Unladen Kerb Mass） 受驗車輛應以製造廠之設定進行車輛幾何檢查（vehicle (in-line) geometry check），以紀錄其車輪定位，受驗車輛應為空車重量。	3.10.6.4.4 車輪定位測量（Wheel Alignment Measurement） 受驗車輛應以製造廠之設定進行車輛幾何檢查（vehicle (in-line) geometry check），以紀錄其車輪定位，受驗車輛應為空車重量。
7.4.4.1 Fill up the tank with fuel to at least 90% of the tank's capacity of fuel.	7.4.5 Unladen Kerb Mass 7.4.5.1 Fill up the tank with fuel to at least 90% of the tank's capacity of fuel.	3.10.7.4.4.1 車輛燃油箱至少裝滿 90%容量的燃油。	3.10.6.4.5 空車重量（Unladen Kerb Mass） 3.10.6.4.5.1 車輛燃油箱至少裝滿 90%容量的燃油。
7.4.4.2 Check the oil level and top up to its maximum level if necessary. Similarly, top up the levels of all other fluids to their maximum levels if necessary.	7.4.5.2 Check the oil level and top up to its maximum level if necessary. Similarly, top up the levels of all other fluids to their maximum levels if necessary.	3.10.7.4.4.2 檢查機油油位，必要時加注至最高油位；同樣地，其他液體若有需要也可加注至其最高限值。	3.10.6.4.5.2 檢查機油油位，必要時加注至最高油位；同樣地，其他液體若有需要也可加注至其最高限值。
7.4.4.3 Ensure that the vehicle has its	7.4.5.3 Ensure that the vehicle has its	3.10.7.4.4.3 確認備胎及其他隨車工具	3.10.6.4.5.3 確認備胎及其他隨車工具

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spare wheel on board, if fitted, along with any tools supplied with the vehicle. Nothing else should be in the car.	spare wheel on board, if fitted, along with any tools supplied with the vehicle. Nothing else should be in the car.	已在車上，除此之外，車內不應有其他物品。	已在車上，除此之外，車內不應有其他物品。
7.4.4.4 Ensure that all tyres are inflated according to the manufacturer's instructions for the appropriate loading condition.	7.4.5.4 Ensure that all tyres are inflated according to the manufacturer's instructions for the appropriate loading condition.	3.10.7.4.4.4 確認所有輪胎依車輛業者之建議進行充氣至適當負載狀態（appropriate loading condition）。	3.10.6.4.5.4 確認所有輪胎依車輛業者之建議進行充氣至適當負載狀態（appropriate loading condition）。
7.4.4.5 Measure the front and rear axle masses and determine the total mass of the vehicle. The total mass is the 'unladen kerb mass' of the vehicle. Record this mass in the test details.	7.4.5.5 Measure the front and rear axle masses and determine the total mass of the vehicle. The total mass is the 'unladen kerb mass' of the vehicle. Record this mass in the test details.	3.10.7.4.4.5 測量前軸及後軸重量，並計算車輛之總重量。此重量即為「空車重量」，將該數據記錄於試驗資料。	3.10.6.4.5.5 測量前軸及後軸重量，並計算車輛之總重量。此重量即為「空車重量」，將該數據記錄於試驗資料。
7.4.4.6 Calculate the required ballast mass, by subtracting the mass of the test driver and test equipment from the required 200 kg interior load.	7.4.5.6 Calculate the required ballast mass, by subtracting the mass of the test driver and test equipment from the required 200 kg interior load.	3.10.7.4.4.6 試驗規定需配重（ballast mass）200 公斤，且此重量應包含試驗駕駛及試驗配備之重量。	3.10.6.4.5.6 試驗規定需配重（ballast mass）200 公斤，且此重量應包含試驗駕駛及試驗配備之重量。
7.4.5 Vehicle Preparation	7.4.6 Vehicle Preparation	3.10.7.4.5 車輛整備	3.10.6.4.6 車輛整備
7.4.5.1 Fit the on-board test equipment and instrumentation in the vehicle. Also fit any associated cables, cabling	7.4.6.1 Fit the on-board test equipment and instrumentation in the vehicle. Also fit any associated cables, cabling	3.10.7.4.5.1 將車載資料擷取配備裝在車輛內，並裝配所有相關電線、接線盒及電源。	3.10.6.4.6.1 將車載資料擷取配備裝在車輛內，並裝配所有相關電線、接線盒及電源。

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boxes and power sources.	boxes and power sources.		
7.4.5.2 Place weights with a mass of the ballast mass. Any items added should be securely attached to the car.	7.4.6.2 Place weights with a mass of the ballast mass. Any items added should be securely attached to the car.	3.10.7.4.5.2 置放相當於配重之重量（weights）。所有物品皆應穩當地固定於車內。	3.10.6.4.6.2 置放相當於配重之重量（weights）。所有物品皆應穩當地固定於車內。
7.4.5.3 With the driver in the vehicle, weigh the front and rear axle loads of the vehicle.	7.4.6.3 With the driver in the vehicle, weigh the front and rear axle loads of the vehicle.	3.10.7.4.5.3 駕駛上車後，分別量測車輛前後軸重量。	3.10.6.4.6.3 駕駛上車後，分別量測車輛前後軸重量。
7.4.5.4 Compare these loads with the “unladen kerb mass”	7.4.6.4 Compare these loads with the “unladen kerb mass”	3.10.7.4.5.4 將上述車輛負載狀態與空車重量進行比較。	3.10.6.4.6.4 將上述車輛負載狀態與空車重量進行比較。
7.4.5.5 The total vehicle mass shall be within ±1% of the sum of the unladen kerb mass, plus 200kg. The front/rear axle load distribution needs to be within 5% of the front/rear axle load distribution of the original unladen kerb mass plus full fuel load. If the vehicle differs from the requirements given in this paragraph, items may be removed or added to the vehicle which has no influence on its performance. Any items added to increase the vehicle mass should be securely attached to the	7.4.6.5 The total vehicle mass shall be within ±1% of the sum of the unladen kerb mass, plus 200kg. The front/rear axle load distribution needs to be within 5% of the front/rear axle load distribution of the original unladen kerb mass plus full fuel load. If the vehicle differs from the requirements given in this paragraph, items may be removed or added to the vehicle which has no influence on its performance. Any items added to increase the vehicle mass should be securely attached to the	3.10.7.4.5.5 車輛總重應為空車重量加上 200 公斤，容許誤差值為±1%。前軸/後軸之空車重與加滿燃油配重後，前軸/後軸重量變化皆在 5%以內。若受驗車輛無法符合此規範，可於車輛內移除或增加與性能表現無關之物品。任何用以增加重量之物品應穩當地固定於車內。	3.10.6.4.6.5 車輛總重應為空車重量加上 200 公斤，容許誤差值為±1%。前軸/後軸之空車重與加滿燃油配重後，前軸/後軸重量變化皆在 5%以內。若受驗車輛無法符合此規範，可於車輛內移除或增加與性能表現無關之物品。任何用以增加重量之物品應穩當地固定於車內。

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car.	car.		
7.4.5.6 Repeat paragraphs 7.4.5.3 and 7.4.5.4 until the front and rear axle loads and the total vehicle mass are within the limits set in paragraph 7.4.5.5. Care needs to be taken when adding or removing weight in order to approximate the original vehicle inertial properties as close as possible. Record the final axle loads in the test details. Record the axle weights of the VUT in the 'as tested' condition.	7.4.6.6 Repeat paragraphs 7.4.6.3 and 7.4.6.4 until the front and rear axle loads and the total vehicle mass are within the limits set in paragraph 7.4.6.5. Care needs to be taken when adding or removing weight in order to approximate the original vehicle inertial properties as close as possible. Record the final axle loads in the test details. Record the axle weights of the VUT in the 'as tested' condition.	3.10.7.4.5.6 重複 3.10.7.4.5.3 與 3.10.7.4.5.4 步驟，直至前後軸重量及車輛總重符合條文 3.10.7.4.5.5 之規定。增加或移除重量時應謹慎執行，以維持車輛之慣性屬性（inertial properties）。試驗內容應記錄最終之軸重。試驗條件應記錄受驗車輛之軸重。	3.10.6.4.6.6 重複 3.10.6.4.6.3 與 3.10.6.4.6.4 步驟，直至前後軸重量及車輛總重符合條文 3.10.6.4.6.5 之規定。增加或移除重量時應謹慎執行，以維持車輛之慣性屬性（inertial properties）。試驗內容應記錄最終之軸重。試驗條件應記錄受驗車輛之軸重。
8 TEST PROCEDURE **8.1 VUT Pre-test Conditioning**	**8 TEST PROCEDURE** **8.1 VUT Pre-test Conditioning**	3.10.8 試驗程序 3.10.8.1 受驗車輛試驗前調整	3.10.7 試驗程序 3.10.7.1 受驗車輛試驗前調整
8.1.1 General 8.1.1.1 A new car is used as delivered to the test laboratory.	8.1.1 General 8.1.1.1 A new car is used as delivered to the test laboratory.	3.10.8.1.1 一般通則 3.10.8.1.1.1 以新車送至檢測機構。	3.10.7.1.1 一般通則 3.10.7.1.1.1 以新車送至檢測機構。
8.1.1.2 If requested by the vehicle manufacturer, drive a maximum of 100km on a mixture of urban and rural roads with other traffic and roadside furniture to 'calibrate' the sensor	8.1.1.2 If requested by the vehicle manufacturer, drive a maximum of 100km on a mixture of urban and rural roads with other traffic and roadside furniture to 'calibrate' the sensor	3.10.8.1.1.2 若車輛業者要求，受驗車輛可行駛於市區及鄉村道路，或檢測機構試驗道路之交通環境及設施下最多 100 公里，以校準感測器系統。行駛時，應避免劇烈加速及煞車。	3.10.7.1.1.2 若車輛業者要求，受驗車輛可行駛於市區及鄉村道路，或檢測機構試驗道路之交通環境及設施下最多 100 公里，以校準感測器系統。行駛時，應避免劇烈加速及煞車。

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system. Avoid harsh acceleration and braking.	system. Avoid harsh acceleration and braking.		
8.1.2 Brakes	8.1.2 Brakes	3.10.8.1.2 煞車	3.10.7.1.2 煞車
8.1.2.1 Condition the vehicle's brakes in the following manner, if it has not been done before or in case the lab has not performed a 100km of driving:	8.1.2.1 Condition the vehicle's brakes in the following manner, if it has not been done before or in case the lab has not performed a 100km of driving:	3.10.8.1.2.1 若未完成或檢測機構未進行 100 公里的行駛，則依下列方式調節車輛煞車：	3.10.7.1.2.1 若未完成或檢測機構未進行 100 公里的行駛，則依下列方式調節車輛煞車：
•Perform twenty stops from a speed of 56km/h with an average deceleration of approximately 0.5 to 0.6g.	•Perform twenty stops from a speed of 56km/h with an average deceleration of approximately 0.5 to 0.6g.	(1) 自車速 56km/h 以平均減速度為 0.5 至 0.6g 之方式執行 20 次煞停。	(1) 自車速 56km/h 以平均減速度為 0.5 至 0.6g 之方式執行 20 次煞停。
•Immediately following the series of 56km/h stops, perform three additional stops from a speed of 72km/h, each time applying sufficient force to the pedal to operate the vehicle's antilock braking system (ABS) for the majority of each stop.	•Immediately following the series of 56km/h stops, perform three additional stops from a speed of 72km/h, each time applying sufficient force to the pedal to operate the vehicle's antilock braking system (ABS) for the majority of each stop.	(2) 完成上述 56km/h 一系列煞車後，緊接著再以 72km/h 的速度煞停 3 次，每次應以足夠的力度踩下煞車，讓車輛的防鎖死煞車系統（antilock braking system，ABS）可於每次煞車時充分作動。	(2) 完成上述 56km/h 一系列煞車後，緊接著再以 72km/h 的速度煞停 3 次，每次應以足夠的力度踩下煞車，讓車輛的防鎖死煞車系統（antilock braking system，ABS）可於每次煞車時充分作動。
•Immediately following the series of 72km/h stops, drive the vehicle at a speed of approximately 72km/h for five minutes to cool the brakes.	•Immediately following the series of 72km/h stops, drive the vehicle at a speed of approximately 72km/h for five minutes to cool the brakes.	(3) 完成上述 72km/h 一系列煞車後，隨即應以 72km/h 的速度行駛 5 分鐘以冷卻煞車。	(3) 完成上述 72km/h 一系列煞車後，隨即應以 72km/h 的速度行駛 5 分鐘以冷卻煞車。

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8.1.3 Tyres	8.1.3 Tyres	3.10.8.1.3 輪胎	3.10.7.1.3 輪胎
8.1.3.1 Condition the vehicle's tyres in the following manner to remove the mould sheen, if this has not been done before for another test or in case the lab has not performed a 100km of driving:	8.1.3.1 Condition the vehicle's tyres in the following manner to remove the mould sheen, if this has not been done before for another test or in case the lab has not performed a 100km of driving:	3.10.8.1.3.1 若未完成其他試驗或檢測機構未進行 100 公里的行駛，則以下列方式調節車輛輪胎，以磨除輪胎之毛邊:	3.10.7.1.3.1 若未完成其他試驗或檢測機構未進行 100 公里的行駛，則以下列方式調節車輛輪胎，以磨除輪胎之毛邊:
•Drive around a circle of 30m in diameter at a speed sufficient to generate a lateral acceleration of approximately 0.5 to 0.6g for three clockwise laps followed by three anticlockwise laps.	•Drive around a circle of 30m in diameter at a speed sufficient to generate a lateral acceleration of approximately 0.5 to 0.6g for three clockwise laps followed by three anticlockwise laps.	(1) 測試車輛沿直徑 30m 之圓環並以能產生接近 0.5 至 0.6g 側向加速度之速度繞行，先以順時針方向行駛 3 圈接著以逆時針方向行駛 3 圈。	(1) 測試車輛沿直徑 30m 之圓環並以能產生接近 0.5 至 0.6g 側向加速度之速度繞行，先以順時針方向行駛 3 圈接著以逆時針方向行駛 3 圈。
•Immediately following the circular driving, drive four passes at 56km/h, performing ten cycles of a sinusoidal steering input in each pass at a frequency of 1Hz and amplitude sufficient to generate a peak lateral acceleration of approximately 0.5 to 0.6g.	•Immediately following the circular driving, drive four passes at 56km/h, performing ten cycles of a sinusoidal steering input in each pass at a frequency of 1Hz and amplitude sufficient to generate a peak lateral acceleration of approximately 0.5 to 0.6g.	(2) 使用頻率 1 赫茲之正弦轉向模式，與符合最高側向加速度 0.5 至 0.6g 之方向盤轉角振幅極值，且車速為 56km/h，使車輛繞行 4 次，並於每次進行 10 次之正弦轉向循環。	(2) 使用頻率 1 赫茲之正弦轉向模式，與符合最高側向加速度 0.5 至 0.6g 之方向盤轉角振幅極值，且車速為 56km/h，使車輛繞行 4 次，並於每次進行 10 次之正弦轉向循環。
•Make the steering wheel amplitude of the final cycle of the final pass double that of the previous inputs.	•Make the steering wheel amplitude of the final cycle of the final pass double that of the previous inputs.	(3) 最終次之最終循環之方向盤轉角振幅應為前次循環之 2 倍。	(3) 最終次之最終循環之方向盤轉角振幅應為前次循環之 2 倍。
8.1.3.2 In case of instability in the	8.1.3.2 In case of instability in the	3.10.8.1.3.2 如正弦轉向模式	3.10.7.1.3.2 如正弦轉向模式

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sinusoidal driving, reduce the amplitude of the steering input to an appropriately safe level and continue the four passes.	sinusoidal driving, reduce the amplitude of the steering input to an appropriately safe level and continue the four passes.	（sinusoidal driving）致使車身不穩定，則應減少方向盤輸入之振幅至安全水平，並完成 4 次操作。	（sinusoidal driving）致使車身不穩定，則應減少方向盤輸入之振幅至安全水平，並完成 4 次操作。
8.1.4 AEB/FCW System Check	8.1.4 AEB/FCW System Check	3.10.8.1.4 緊急煞車輔助系統/前方碰撞預警系統檢測	3.10.7.1.4 緊急煞車輔助系統/前方碰撞預警系統檢測
8.1.4.1 Before any testing begins, perform a maximum of ten runs at the lowest test speed the system is supposed to work, to ensure proper functioning of the system.	8.1.4.1 Before any testing begins, perform a maximum of ten runs at the lowest test speed the system is supposed to work, to ensure proper functioning of the system.	3.10.8.1.4.1 試驗開始前，應以可觸發系統之最低試驗速度行駛至多 10 次，以確保系統正常運作。	3.10.7.1.4.1 試驗開始前，應以可觸發系統之最低試驗速度行駛至多 10 次，以確保系統正常運作。
8.2 Test Scenarios	**8.2 Test Scenarios**	3.10.8.2 試驗情境	3.10.7.2 試驗情境
8.2.1 The performance of the AEB/FCW system is assessed in the CCRs, CCRm, CCRb, CCFtap, CCCscp and CCFhos/CCFhol scenarios as shown in the sections 8.2.3 to 8.2.5.	8.2.1 The performance of the AEB system is assessed in the CCRs, CCRm and CCRb scenarios as shown in Figures 6abc.	3.10.8.2.1 緊急煞車輔助系統試驗/前方碰撞預警系統試驗，係以前車靜止情境試驗（CCRs）、前車移動情境試驗（CCRm）、前車煞車情境試驗（CCRb）、轉彎穿越路徑情境試驗（CCFtap）、直行交匯路徑情境試驗（CCCscp）及前方對向來車直行情境試驗/前方對向來車變換車道情境試驗（CCFhos/ CCFhol）作評等，如 3.10.8.2.3 至 3.10.8.2.5 節所述。	3.10.7.2.1 緊急煞車輔助系統試驗，係以前車靜止情境試驗（CCRs）、前車移動情境試驗（CCRm）及前車煞車情境試驗（CCRb）作評等，如圖 7abc 所示。
8.2.1.1 For CCRs AEB, CCRs FCW and	The assessment is based on a GRID	3.10.8.2.1.1 對於 CCRs AEB、CCRs	應基於車輛業者應提供之網格點預

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CCRm, the assessment is based on a GRID prediction provided by the OEM. The actual scenarios to be tested to verify the prediction will be chosen randomly, distributed in line with the predicted colour distribution (excluding red points).	prediction provided by the OEM. The actual scenarios to be tested to verify the prediction will be chosen randomly, distributed in line with the predicted colour distribution (excluding red points).	FCW 及 CCRm，應基於車輛業者應提供之網格點預測作評等。依預測的顏色分佈（不包括紅點）將隨機選擇並以實際試驗情境來驗證預測值。	測作評等。依預測的顏色分佈（不包括紅點）將隨機選擇並以實際試驗情境來驗證預測值。
The vehicle sponsor will fund 15 verification tests, where applicable. For AEB 10 tests (CCRs and CCRm) and 5 tests for FCW (CCRs).	The vehicle sponsor will fund 10 verification tests per scenario, where applicable. For AEB City, 10 tests in CCRs (10-50km/h). For AEB Inter-Urban, 10 tests for AEB (CCRm) and 10 tests for FCW (CCRs and CCRm).	進行 10 次 AEB 驗證試驗(CCRs 及 CCRm）與 5 次 FCW 驗證試驗（CCRs）。	AEB City 在 CCRs 情境（10-50km/h）進行 10 次驗證試驗，AEB Inter-Urban 進行 10 次 AEB 驗證試驗（CCRm）與 10 次 FCW 驗證試驗（CCRs 與 CCRm）。
The vehicle manufacturer has the option of sponsoring up to 10 additional verification tests for AEB CCR and 10 for FCW.(參考評等規章 3.3.2.1，原文應為誤植，故第三版條文 FCW 改為 5 次)	The vehicle manufacturer has the option of sponsoring up to 10 additional verification tests for AEB City and 10 for AEB Inter-Urban.	車輛業者可自費申請 AEB 前車情境至多 10 次額外的驗證試驗與 FCW 至多 5 次額外的驗證試驗。	車輛業者可自費申請 AEB City 與 AEB Inter-Urban 各至多 10 次額外的驗證試驗。
8.2.1.2 For CCRb and CCFtap verification tests are conducted at all test points.		3.10.8.2.1.2 對於 CCRb 及 CCFtap 應對所有測試點進行驗證試驗。	

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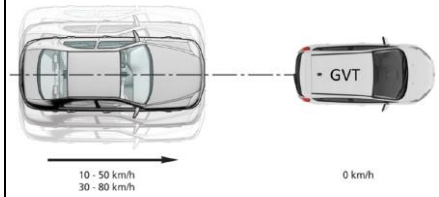
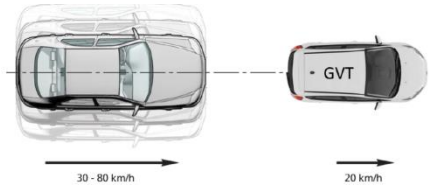
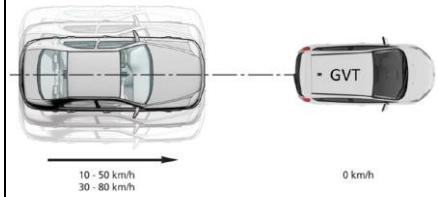
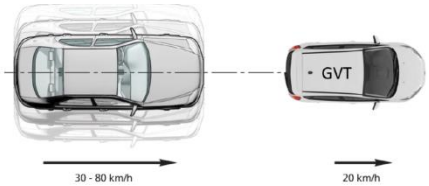
8.2.1.3 For CCCscp verification tests are conducted at all test points where sufficient performance to score points is predicted.		3.10.8.2.1.3 對於 CCCscp 應對所有預測可得分之測試點進行驗證試驗。	
8.2.2 For CCR testing purposes, assume a straight-line path equivalent to the centreline of the lane in which the collision occurred, hereby known as the test path. Control the VUT with driver inputs or using alternative control systems that can modulate the vehicle controls as necessary to perform the tests.	8.2.2 For testing purposes, assume a straight line path equivalent to the centreline of the lane in which the collision occurred, hereby known as the test path. Control the VUT with driver inputs or using alternative control systems that can modulate the vehicle controls as necessary to perform the tests.  Figure 6a: CCRs scenario  Figure 6b: CCRm scenario	3.10.8.2.2 前車情境試驗路徑應維持於車道中線。可由駕駛直接控制受驗車輛，另試驗若有需要，可以使用調節車輛控制之控制系統作替代。	3.10.7.2.2 試驗路徑應維持於車道中線。可由駕駛直接控制受驗車輛，另試驗若有需要，可以使用調節車輛控制之控制系統作替代。  圖 7a：前車靜止情境試驗  圖 7b：前車移動情境試驗

<table>
<tr><th>2025 AEB 試驗規章</th><th>2019 AEB 試驗規章</th><th>修訂 TNCAP 條文草案(第三版)</th><th>對應 TNCAP 條文</th></tr>
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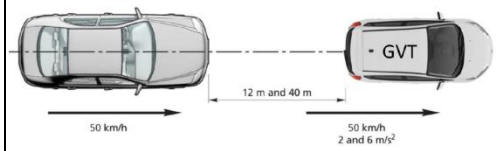
<td></td>
<td> 

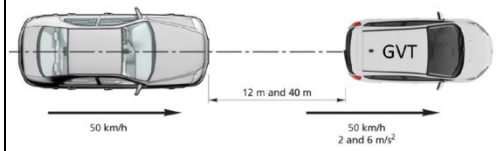
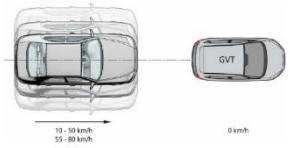
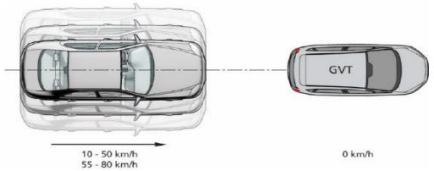
Figure 6c: CCRb scenario</td>
<td></td>
<td> 

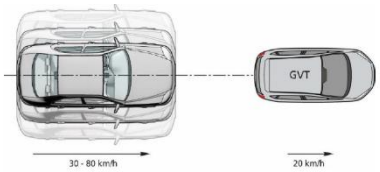
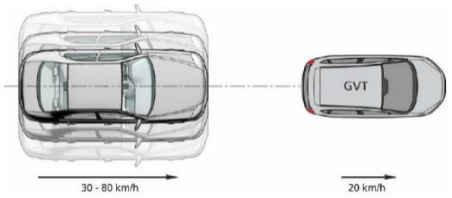
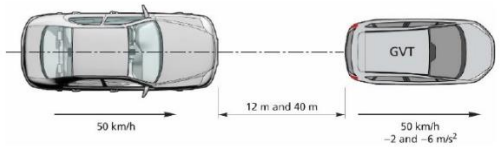
圖 7c：前車煞車情境試驗</td>
</tr>
<tr>
<td>8.2.2.1 Car-to-Car Rear stationary
The CCRs scenario is a combination of speed and overlap with 5km/h incremental steps in speed and 25% steps in overlap within the ranges as shown in the tables below.
 
Figure 8-1: CCRs scenario
<table>
<tr><th></th><th colspan="2">AEB + FCW combined</th><th rowspan="2">AEB only</th><th rowspan="2">FCW only</th></tr>
<tr><th></th><th>AEB</th><th>FCW</th></tr>
<tr><td>AEB CCRs</td><td>10-50 km/h
-50% to 50%</td><td>55-80 km/h
-50% to 50%</td><td>10-80 km/h
-50% to 50%</td><td>55-80 km/h
-50% to 50%</td></tr>
</table>

ESS tests will only be allowed for the -50% overlap situation for left hand drive vehicles (50% for right hand drive).

8.2.2.2 Car-to-Car Rear moving
The CCRm scenario is a combination</td>
<td>8.2.3 The CCRs and CCRm scenarios are a combination of speed and overlap with 5km/h incremental steps in speed and 25% in overlap within the ranges as shown in the tables below.
<table>
<tr><th></th><th colspan="3">CCRs</th></tr>
<tr><th></th><th colspan="2">AEB + FCW combined</th><th rowspan="2">AEB only</th><th rowspan="2">FCW only</th></tr>
<tr><th></th><th>AEB</th><th>FCW</th></tr>
<tr><td>AEB City</td><td>10-50 km/h
-50%-50%</td><td>-</td><td>10-50 km/h
-50%-50%</td><td>-</td></tr>
<tr><td>AEB Inter-Urban</td><td>-</td><td>30-80 km/h
-50%-50%</td><td>30-80 km/h
-50%-50%</td><td>30-80 km/h
-50%-50%</td></tr>
</table>
</td>
<td>3.10.8.2.2.1 前車靜止情境試驗
前車靜止情境試驗是速度及重疊之組合，必須於下列表格中之速度範圍內，以 5km/h 遞增步驟及 25%重疊範圍內進行。
 
圖 10：前車靜止情境試驗
(請參末頁表格)

僅允許在-50%重疊情形下進行緊急轉向輔助系統(ESS)試驗。

3.10.8.2.2.2 前車移動情境試驗
前車移動情境試驗是速度及重疊之</td>
<td>3.10.7.2.3 前車靜止情境試驗與前車移動情境試驗是速度及重疊之組合，必須於下列表格中之速度範圍內，以 5km/h 遞增步驟及 25%重疊範圍內進行。
(請參末頁表格)</td>
</tr>
</table>

2025 AEB 試驗規章	2019 AEB 試驗規章	修訂 TNCAP 條文草案(第三版)	對應 TNCAP 條文
of speed and overlap with 5km/h incremental steps in speed and 25% steps in overlap within the ranges as shown in the tables below.		組合，必須於下列表格中之速度範圍內，以 5km/h 遞增步驟及 25%重疊範圍內進行。(對照第二版條文 3.10.7.2.3)	
 Figure 8-2: CCRm scenario		 圖 11：前車移動情境試驗	
	CCRm AEB + FCW combined: AEB / FCW; AEB only; FCW only AEB Inter-Urban: 30-80 km/h -50%-50% / 50-80 km/h -50%-50% / 30-80 km/h -50%-50% / 50-80 km/h -50%-50%		
AEB + FCW combined & AEB Only AEB AEB CCRm: 30-80 km/h -50%-50%		(請參末頁表格)	(請參末頁表格)
8.2.2.3 Car-to-Car Rear braking		3.10.8.2.2.3 前車煞車情境試驗	3.10.7.2.4 前車煞車情境試驗中，受驗車輛及全球目標車皆以 50km/h 之恆定速度行駛，減速度為 2 m/s² 及 6m/s²，間距（headway）為 12 m 及 40m。可於試驗程序結束時，以不同重疊試驗情境進行以監控為目的之試驗。
The CCRb tests will be performed at a fixed speed of 50km/h for both VUT and GVT with all combinations of -2 and -6m/s² acceleration and 12 and 40m headway. Different overlap situations may be tested for monitoring purpose at the end of the test program.	The CCRb tests will be performed at a fixed speed of 50km/h for both VUT and GVT with all combinations of 2 and 6m/s² deceleration and 12 and 40m headway. Different overlap situations may be tested for monitoring purpose at the end of the test program.	前車煞車情境試驗中，受驗車輛及全球目標車皆以 50km/h 之恆定速度行駛，減速度為 2 m/s² 及 6m/s²，間距（headway）為 12 m 及 40m。可於試驗程序結束時，以不同重疊試驗情境進行以監控為目的之試驗。	
 Figure 8-3: CCRb scenario		 圖 12：前車煞車情境試驗	
	CCRb AEB+FCW combined, AEB only & FCW only 2 m/s² / 6 m/s² AEB Inter-Urban 12m: 50 km/h / 50 km/h AEB Inter-Urban 40m: 50 km/h / 50 km/h		
AEB+FCW combined & AEB only -2 m/s² / -6 m/s² AEB CCRb 12m: 50 km/h / 50 km/h AEB CCRb 40m: 50 km/h / 50 km/h		(請參末頁表格)	

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For CCRb $T_0 = T_{GVT\_deceleration\_start} - 1s$. T_0 begins 1 second before GVT starts deceleration, for tolerance monitoring purposes. The desired deceleration of the GVT shall be reached within 1.0 second (T_0 + 2.0s) which after the GVT shall remain within ± 0.5 km/h of the reference speed profile, derived from the desired deceleration, until the vehicle speed equals 2km/h.	8.2.4.1 The desired deceleration of the GVT shall be reached within 1.0 seconds (T_0 + 1.0s) which after the GVT shall remain within ± 0.5 km/h of the reference speed profile, derived from the desired deceleration, until the vehicle speed equals 1 km/h.	前車煞車情境試驗 $T_0 = T_{GVT\_deceleration\_start} - 1s$，以監控容許誤差為目的 T_0 從全球目標車開始減速前 1 秒起算，全球目標車應於 1.0 秒內達到規定之減速度(T_0 + 2.0s) ，當全球目標車維持在參考速度曲線的± 0.5 km / h 範圍內後，其產生規定之減速度，直到車速等於 2 km / h。	3.10.7.2.4.1 全球目標車應於 1.0 秒內達到規定之減速度(T_0 + 1.0s) ，當全球目標車維持在參考速度曲線的± 0.5 km / h 範圍內後，其產生規定之減速度，直到車速等於 1 km / h。
8.2.3 Car-to-Car Front turn-across-path 8.2.3.1 For the CCFtap scenario, for the VUT assume an initial straight-line path followed by a turn (clothoid, fixed radius and clothoid as specified in section 8.2.3.5), followed again by a straight line, hereby known as the test path.		3.10.8.2.3 轉彎穿越路徑情境試驗 3.10.8.2.3.1 受驗車輛初始行駛於直線路徑，接著轉彎(迴旋路徑與固定半徑如 3.10.8.2.3.5 所述)，最後再次行駛於直線路徑。	
8.2.3.2 The GVT will follow a straight-		3.10.8.2.3.2 全球目標車沿著與受驗車	

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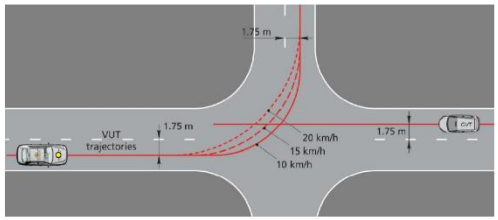
line path in the lane adjacent to the VUT's initial position, in the opposite direction to the VUT. The straight-line path of the VUT and GVT will be 1.75m from the centre of the centre dashed lane marking of the VUT lane.  Figure 8-4: CCFtap scenario VUT and GVT paths		輛初始位置相鄰之車道直線行駛，方向與受驗車輛相反，受驗車輛與全球目標車行駛路徑與車道中心虛線距離不得小於 1.5m。 (請參末頁圖示)	
8.2.3.3 The paths of the VUT and target vehicle will be synchronised so that the front edges of the vehicle meet with a lateral position that gives a 50% overlap (assuming no system reaction) of the width of the VUT. The VUT longitudinal path error shall be within ± [0.5] m when determined in accordance with section 3.2.1.		3.10.8.2.3.3 受驗車輛與全球目標車行駛路徑將同步，致使受驗車輛前緣與全球目標車橫向位置相交，該橫向位置與受驗車輛寬度之 50%重疊(若系統無作動)，依據 3.10.3.2.1 節，受驗車輛縱向偏移量應在±0.5m 以內。	

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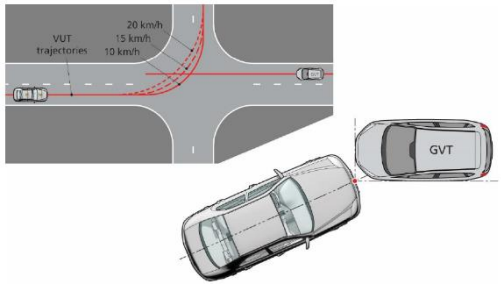 Figure 8-5: CCFtap scenario paths and impact definition		(請參末頁圖示)	
8.2.3.4 The CCFtap scenarios are all combinations of VUT speeds of 10, 15 and 20 km/h combined with GVT speeds of 30, 45 and 60 km/h.		3.10.8.2.3.4 轉彎穿越路徑情境試驗皆為受驗車輛速度 10、15、20km/h 與全球目標車速度 30、45、60km/h 之組合。	
8.2.3.5 The following parameters should be used to create the test paths where the turn signal is applied at 1.0s ±0.5s before T_{steer}:		3.10.8.2.3.5 試驗路徑應使用以下參數，其中轉向訊號應於 T_{steer} 前 1±0.5 秒發出。	

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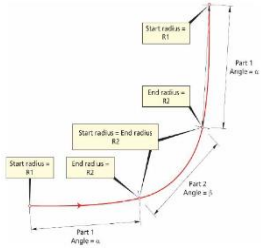 Test speed / Part 1 (clothoid) / Part 2 (constant radius) / Part 3 (clothoid) Start Radius R1 [m] / End Radius R2 [m] / Angle α [deg] / Start Radius R2 [m] / End Radius R2 [m] / Angle β [deg] / Start Radius R2 [m] / End Radius R1 [m] / Angle α [deg] 10 km/h: 1500 / 9.00 / 20.62 / 9.00 / 9.00 / 48.76 / 9.00 / 1500 / 20.62 15 km/h: 1500 / 11.75 / 20.93 / 11.75 / 11.75 / 48.14 / 11.75 / 1500 / 20.93 20 km/h: 1500 / 14.75 / 21.79 / 14.75 / 14.75 / 46.42 / 14.75 / 1500 / 21.79 Figure 8-6: CCFtap scenario paths definition		(請參末頁圖示及表格)	
8.2.4 Car-to-car Crossing Straight Crossing Path (CCCscp)		3.10.8.2.4 直行交匯路徑情境試驗	
8.2.4.1 For the VUT assume a straight-line path equivalent to the centre line of the driving lane, approaching and continuing straight ahead across a junction.		3.10.8.2.4.1 受驗車輛行駛於車道中心線之直線路徑，接近並繼續直行穿越交匯處。	
8.2.4.2 For the GVT assume a straight-line path equivalent to the centre line of the driving lane, perpendicular to that		3.10.8.2.4.2 全球目標車行駛於車道中心線之直線路徑，垂直於受驗車輛路徑並穿越交匯處，試驗情境如圖 16	

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of the VUT, travelling across the junction. The scenario is represented in Figure 8-7 Straight Crossing Path VUT and GVT paths and Figure 8-9 SCP start from stop setup, where '//-//' indicates a vehicle being centred in the driving lane. For the start from stop tests the GVT travels across the junction from the farside direction. For all other test speed combinations the GVT will travel from either the nearside or farside direction, selected at random by the test laboratory.		與圖 18 所示，其中「//-//」表示車輛位於行駛車道中心，對於靜止狀態啟動試驗，全球目標車由遠端方向穿越交匯處；對於其他所有試驗速度組合，由執行機構與檢測機構共同隨機選擇全球目標車由遠端或近端方向行進。	
8.2.4.3 To achieve the correct GVT speed, the GVT must be accelerated at a rate >1m/s^2 during the acceleration phase. This is followed by a 0.5s stabilization phase, after which steady state conditions must be met as per 8.4.2.		3.10.8.2.4.3 為達到正確的全球目標車速度，全球目標車於加速階段應以大於 1m/s^2 之加速度加速，接著是 0.5s 的穩定階段，最後應滿足 3.10.8.4.2 節之穩態條件。	
8.2.4.4 The paths will be synchronised to that the centre front of the VUT collides with the side of the GVT, 25%		3.10.8.2.4.4 試驗路徑將同步至受驗車輛中心前端與全球目標車車長 25% 處產生側面碰撞(若系統無作動)。	

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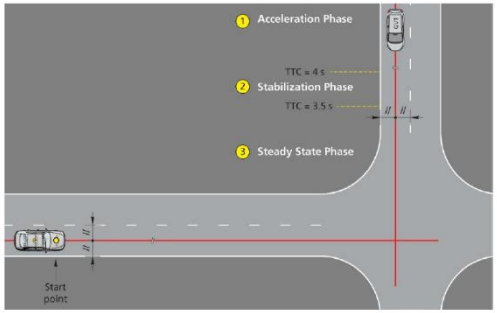
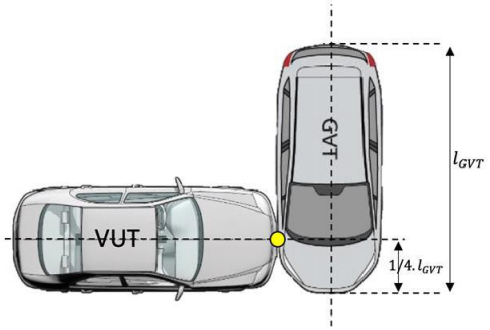
along the length of the GVT (assuming no system reaction).  Figure 8-7 Straight Crossing Path VUT and GVT paths  Figure 8-8 SCP Impact point definition 8.2.4.5 For the Start from stop scenario the VUT is at standstill with an initial longitudinal distance to the GVTs side of 2.9 m (Figure 8-9). Apply brake		(請參末頁圖示) (請參末頁圖示) 3.10.8.2.4.5 對於靜止狀態啟動情境，受驗車輛初始為靜止狀態，與全球目標車之縱向距離為 2.9m(圖 18)，踩下煞車踏板以確保受驗車輛為靜止	

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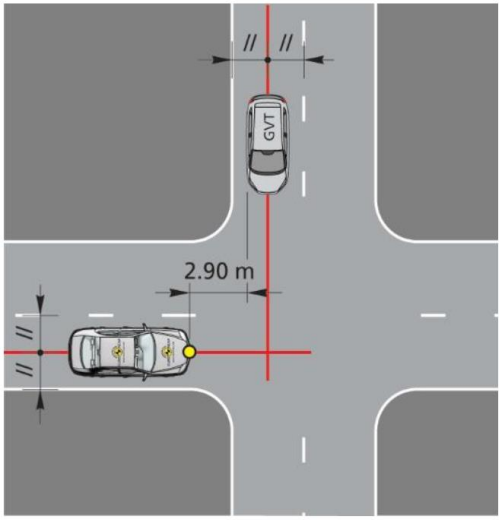
pedal to ensure that VUT is stationary until T_0 condition is reached, and then conduct the Gas-Pedal profile as described in ANNEX C: CCCscp Start from Stop. Determination of T_0 to ensure correct impact location (as in 8.2.4.4.) is also described in ANNEX C: CCCscp Start from Stop. The junction has no further markings (e.g. Stop line).  Figure 8-9 SCP start from stop setup		狀態，直到達到 T_0 條件，接著依照 3.10.11 所述執行油門踏板設定，確認 T_0 以確保正確碰撞位置(如 3.10.8.2.4.4 及 3.10.11 所述)，該交匯處無其他標線(如停止線)。 (請參末頁圖示)	
8.2.4.6 In the CCCscp scenario, AEB performance is tested at every		3.10.8.2.4.6 在直行交匯路徑情境試驗中，AEB 在下表所示之每項受驗車	

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combination of VUT and GVT speed shown in the table below (where sufficient performance to score points is predicted). FCW performance is tested at all tests with a VUT speed ≥ 40km/h (where sufficient performance to score points is predicted).		輛及全球目標車速度組合進行試驗(預測表現足以得分)，FCW 在所有試驗中均以受驗車輛速度大於等於 40km/h 進行試驗(預測表現足以得分)。	
		(請參末頁表格)	
8.2.4.7 Where a test scenario is avoided by AEB, do not test the same combination for FCW performance as points are awarded automatically.		3.10.8.2.4.7 若 AEB 於試驗情境中作動且避免碰撞，則無需執行相同 FCW 情境，並自動獲得分數。	
8.2.5 Car-to-Car Front Head-On (CCFho)		3.10.8.2.5 前方對向來車情境試驗	
8.2.5.1 VUT and SOV speeds shall be equal for all CCFho scenarios.		3.10.8.2.5.1 對於所有前方對向來車情境，受驗車輛及其他次要車輛速度應相同。	
8.2.5.2 The CCFhos and CCFhol tests described in this document require use of two different types of lane markings		3.10.8.2.5.2 前方對向來車直行情境試驗及前方對向來車變換車道情境試驗要求符合車道寬度不得小於 3m；	

VUT	GVT				
	20 km/h	*30 km/h*	*40 km/h*	*50 km/h*	*60 km/h*
Start from stop	AEB	AEB	AEB	AEB	AEB
20 km/h	AEB	AEB	AEB	AEB	AEB
30 km/h	AEB	AEB	AEB	AEB	AEB
40 km/h	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW
50 km/h	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW
60 km/h	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW

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conforming to one of the lane markings as defined in UNECE Regulation 130 to mark a lane with a width of 3.5 to 3.7m when measured from the inside edge of the lane marking: - Dashed line with a width between 0.10 and 0.25m (0.10 and 0.15m for centerlines) - Solid line with a width between 0.10 and 0.25m		(1) 白虛線線寬為 10cm。應使用線段長 4m，間距 6m。 (2) 路面邊緣應使用白實線，線寬為 15cm。	
8.2.5.3 For the CCFhos/CCFhol scenarios of the OEM must demonstrate, by means of a dossier, how their system responds in the following scenario. Points will be awarded based on the information provided in the dossier. Euro NCAP reserve the right to undertake physical testing in the CCFhos/CCFhol scenarios to verify the information in the dossier, using the method detailed below.		3.10.8.2.5.3 車輛業者應透過文件說明其系統於前方對向來車直行情境及前方對向來車變換車道情境中如何作動，TNCAP 執行機構擁有保留該文件之權利，透過實際測試(如下文詳述方法)驗證文件資訊並給予分數。	
8.2.5.4 Both the CCFhos and CCFhol		3.10.8.2.5.4 前方對向來車直行情境試	

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scenario will be assessed at test speed combinations of 50km/h for VUT and 50km/h for GVT and 70km/h for VUT and 70km/h for GVT respectively.		驗及前方對向來車變換車道情境試驗皆以受驗車輛 50km/h、全球目標車 50km/h，與受驗車輛 70km/h、全球目標車 70km/h 之測試速度組合執行。	
8.2.5.5 For the CCFhos/CCFhol scenarios, for the VUT assume a straight-line path in the middle of the lane at a constant speed.		3.10.8.2.5.5 對於前方對向來車直行情境試驗及前方對向來車變換車道情境試驗，假設受驗車輛以穩定速度行駛於車道中間之直線路徑。	
8.2.5.6 For the CCFhos scenario, the GVT will follow the same path as the VUT, travelling in the opposite direction at a constant speed equal to that of the VUT.		3.10.8.2.5.6 對於前方對向來車變換車道情境試驗，全球目標車與受驗車輛以相同之穩定速度及路徑反方向行駛。	
8.2.5.7 For the CCFhol scenario, the GVT will follow an initial straight-line path followed by a lane change manoeuvre at a constant speed equal to that of the VUT. The scenarios are represented in Figure 8-10 CCFhos and Figure 8-12 CCFhol path at 70 and 50		3.10.8.2.5.7 對於前方對向來車變換車道情境試驗，全球目標車行駛於初始路徑，接著與受驗車輛相同之穩定速度進行變換車道，前方對向來車直行情境試驗如圖 19，前方對向來車變換車道情境試驗 70km/h 與 50km/h 路徑如圖 21，其詳細資料參 3.10.10。	

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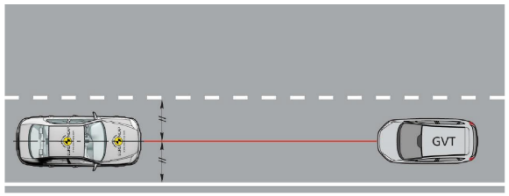
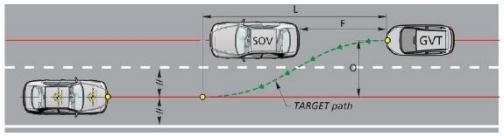
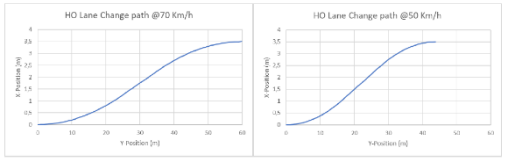
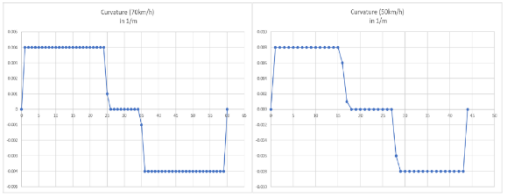
km/h Details on VUT path is given on ANNEX B: Lane Change Path Definition.  Figure 8-10 CCFhos  Figure 8-11 CCFhol  Figure 8-12 CCFhol path at 70 and 50 km/h  Figure 8-13 CCFhol curvature values at		[(請參末頁圖示及表格)]	

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70 and 50 km/h GVT Speed / VUT Speed / Lane change offset (O) / Lane change length (L) / Following Distance (F) / TTC at end of lane change / Max Lateral acceleration 50km/h / 50km/h / 3.5m / 44m / [13.9]m / [1.5] s / 1.50 m/s² 70km/h / 70km/h / 3.5m / 60m / [19.4]m / [1.5] s / 1.50 m/s²			
8.3 Test Conduct	**8.3 Test Conduct**	3.10.8.3 試驗規範（Test Conduct）	3.10.7.3 試驗規範（Test Conduct）
8.3.1 Before every test run, drive the VUT around a circle of maximum diameter 30m at a speed less than 10km/h for one clockwise lap followed by one anticlockwise lap, and then manoeuvre the VUT into position on the test path. If requested by the OEM a simple initialisation run may be included before every test run. Bring the VUT to a halt and push the brake pedal through the full extent of travel and release.	8.3.1 Before every test run, drive the VUT around a circle of maximum diameter 30m at a speed less than 10km/h for one clockwise lap followed by one anticlockwise lap, and then manoeuvre the VUT into position on the test path. If requested by the OEM an initialisation run may be included before every test run. Bring the VUT to a halt and push the brake pedal through the full extent of travel and release.	3.10.8.3.1 每次試驗前，受驗車輛應以低於 10km/h 之速度繞著最大直徑 30m 之圓圈行駛，先以順時針方向行駛一圈，接著以逆時針方向行駛一圈，最後再將受驗車輛開到試驗道路上的預備位置。若車輛業者要求，可於每項試驗前進行簡易啟始程序(initialization run)。待受驗車輛完全停止，將煞車踏板踩到底再放開。	3.10.7.3.1 每次試驗前，受驗車輛應以低於 10km/h 之速度繞著最大直徑 30m 之圓圈行駛，先以順時針方向行駛一圈，接著以逆時針方向行駛一圈，最後再將受驗車輛開到試驗道路上的預備位置。若車輛業者要求，可於每項試驗前進行此啟始程序(initialization run)。待受驗車輛完全停止，將煞車踏板踩到底再放開。
8.3.2 For vehicles with an automatic transmission select D. For vehicles with a manual transmission select the highest gear where the RPM will be at least 1500 at the test speed. If fitted, a speed limiting device or cruise control	8.3.2 For vehicles with an automatic transmission select D. For vehicles with a manual transmission select the highest gear where the RPM will be at least 1500 at the test speed. If fitted, a speed limiting device or cruise control	3.10.8.3.2 若車輛為自動變速者，應選擇前進檔位 D。若車輛為手排變速者於試驗速度行駛時，應選擇轉速可達 1500rpm 之最高檔位。若有配備，可用車速限制裝置或定速巡航維持受驗車輛之速度(不適用 ACC)，若車輛	3.10.7.3.2 若車輛為自動變速者，應選擇前進檔位 D。若車輛為手排變速者於試驗速度行駛時，應選擇轉速可達 1500rpm 之最高檔位。若有配備，可用車速限制裝置或定速巡航維持受驗車輛之速度(不適用 ACC)，若車輛

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may be used to maintain the VUT speed (not ACC), unless the vehicle manufacturer shows that there are interferences of these devices with the AEB system in the VUT. Apply only minor steering inputs as necessary to maintain the VUT tracking along the test path.	may be used to maintain the VUT speed (not ACC), unless the vehicle manufacturer shows that there are interferences of these devices with the AEB system in the VUT. Apply only minor steering inputs as necessary to maintain the VUT tracking along the test path.	業者認為該裝置會干擾受驗車輛中的緊急煞車輔助系統除外。應盡量減少轉動方向盤，以維持受驗車輛行駛於試驗道路。	業者認為該裝置會干擾受驗車輛中的緊急煞車輔助系統除外。應盡量減少轉動方向盤，以維持受驗車輛行駛於試驗道路。
8.3.3 Perform the first test a minimum of 90s and a maximum of 10 minutes after completing the tyre conditioning (if applicable), and subsequent tests after the same time period. If the time between consecutive tests exceeds 10 minutes perform three brake stops from 72 km/h at approximately 0.3g.	8.3.3 Perform the first test a minimum of 90s and a maximum of 10 minutes after completing the tyre conditioning (if applicable), and subsequent tests after the same time period. If the time between consecutive tests exceeds 10 minutes perform three brake stops from 72 km/h at approximately 0.3g.	3.10.8.3.3 應於輪胎調節(若適用)後 90 秒至 10 分鐘內進行第一次試驗，並於同樣的時間範圍內進行其他試驗。如試驗間隔時間超過 10 分鐘，則應從 72km/h 以平均減速度為 0.3 g 之方式執行 3 次煞停。	3.10.7.3.3 應於輪胎調節(若適用)後 90 秒至 10 分鐘內進行第一次試驗，並於同樣的時間範圍內進行其他試驗。如試驗間隔時間超過 10 分鐘，則應從 72km/h 以平均減速度為 0.3 g 之方式執行 3 次煞停。
Between tests, manoeuvre the VUT at a maximum speed of 50km/h and avoid riding the brake pedal and harsh acceleration, braking or turning unless strictly necessary to maintain a safe testing environment.	Between tests, manoeuvre the VUT at a maximum speed of 50km/h and avoid riding the brake pedal and harsh acceleration, braking or turning unless strictly necessary to maintain a safe testing environment.	執行下次試驗前，行駛速度不得高於 50km/h，且非必要情況下，應儘量避免踩踏煞車（riding the brake pedal）、劇烈加速、煞車或轉彎，以維持安全的試驗環境。	執行下次試驗前，行駛速度不得高於 50km/h，且非必要情況下，應儘量避免踩踏煞車（riding the brake pedal）、劇烈加速、煞車或轉彎，以維持安全的試驗環境。

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8.4 Test Execution 8.4.1 Accelerate the VUT and GVT (if applicable) to the respective test speeds.	**8.4 Test Execution** 8.4.1 Accelerate the VUT and GVT (if applicable) to the respective test speeds.	3.10.8.4 試驗執行 3.10.8.4.1 受驗車輛與全球目標車(若適用)應各自加速至試驗規定速度。	3.10.7.4 試驗執行 3.10.7.4.1 受驗車輛與全球目標車(若適用)應各自加速至試驗規定速度。
8.4.2 The test shall start at T_0 and is valid when all boundary conditions are met between T_0 and T_{AEB} and/or T_{FCW}, or any other system intervention:	8.4.2 The test shall start at T_0 (4s TTC) and is valid when all boundary conditions are met between T_0 and T_{AEB} and/or T_{FCW}, or any other system intervention: - Speed of VUT (GPS-speed) Test speed + 1.0 km/h - Speed of GVT (GPS-speed) Test speed ± 1.0 km/h - Lateral deviation from test path for VUT 0 ± 0.05 m - Lateral deviation from test path for GVT 0 ± [0.10] m - Relative distance VUT and GVT (CCRb) 12m or 40m ± 0.5m - Yaw velocity of VUT 0 ± 1.0 °/s - Yaw velocity of GVT 0 ± [1.0] °/s - Steering wheel velocity 0 ± 15.0 °/s	3.10.8.4.2 試驗應於 T_0 開始，若 T_0 與 T_{AEB}/T_{FCW} 或任何其他系統介入時符合下列所有邊界條件，則該次試驗認定有效:	3.10.7.4.2 試驗應於 T_0（4s TTC）開始，若 T_0 與 T_{AEB}/T_{FCW} 或任何其他系統介入時符合下列所有邊界條件，則該次試驗認定有效: (1) 受驗車輛速度（GPS-速度）試驗速度+1.0 km/h (2) 全球目標車速度（GPS-速度）試驗速度±1.0 km/h (3) 受驗車輛行駛路徑側向偏移距離 0 ± 0.05 m (4) 全球目標車行駛路徑側向偏移距離 0 ± 0.10 m (5) 受驗車輛與全球目標車相對距離（CCRb）12m or 40m ± 0.5m (6) 受驗車輛的橫擺角速度 0 ± 1.0 °/s (7) 全球目標車的橫擺角速度 0 ± 1.0 °/s

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<table><tr><th></th><th>Remark</th><th>VUT</th><th>GVT</th></tr><tr><td rowspan="2">Speed [km/h]</td><td>Constant state</td><td>+ 1.0</td><td>± 1.0</td></tr><tr><td>Deceleration state</td><td></td><td>± 0.5</td></tr><tr><td rowspan="3">Lateral deviation [m]</td><td>CCR, CCCscp, CCFhos, CCFhol</td><td>0 ± 0.05</td><td rowspan="3">0 ± 0.10</td></tr><tr><td>CCFtap(initial straight-line path)</td><td>0 ± 0.05</td></tr><tr><td>CCFtap(turn)</td><td>0 ± 0.10</td></tr><tr><td>Relative distance VUT and GVT [m]</td><td>CCRb only</td><td colspan="2">12 or 40 ± 0.5</td></tr><tr><td>Yaw velocity</td><td>CCFtap (until T_{steer}) [°/s]</td><td>0 ± 1.0</td><td></td></tr><tr><td>Steering wheel velocity</td><td>CCFtap (until T_{steer}) [°/s]</td><td>0 ± 15.0</td><td></td></tr></table>		[(請參末頁表格)](#)	[(8) 方向盤轉速 0 ± 15.0 °/s](#)
8.4.3 The end of a test is considered when one of the following occurs: - V_{VUT} = 0km/h* - V_{VUT} < V_{GVT} for CCR - Contact between VUT and GVT - The GVT has left the path of the VUT (CCFtap and CCCscp)	8.4.3 The end of a test is considered when one of the following occurs: - V_{VUT} = 0km/h - V_{VUT} < V_{GVT} - Contact between VUT and GVT	[3.10.8.4.3](#)發生下述條件其中之一時試驗即結束: (1) 試驗過程中受驗車輛之速度=0km/h* (2) 試驗過程中受驗車輛之速度<試驗過程中全球目標車之速度[(對於 CCR)](#) (3) 受驗車輛與全球目標車發生碰撞 (4) [全球目標車偏移受驗車輛之路徑(CCFtap 及 CCCscp)](#) [(請參末頁表格)](#)	[3.10.7.4.3](#)發生下述條件其中之一時試驗即結束: (1) 試驗過程中受驗車輛之速度=0km/h (2) 試驗過程中受驗車輛之速度<試驗過程中全球目標車之速度 (3) 受驗車輛與全球目標車發生碰撞
<table><tr><th></th><th>CCRs/m/b</th><th>CCFtap</th><th>CCCscp</th><th>CCFhos/hol</th></tr><tr><td>V_{VUT} = 0km/h</td><td>✓</td><td>✓*</td><td>✓</td><td>✓</td></tr><tr><td>V_{VUT} < V_{GVT} for CCR</td><td>✓</td><td></td><td></td><td></td></tr><tr><td>Contact between VUT and GVT</td><td>✓</td><td>✓</td><td>✓</td><td>✓</td></tr><tr><td>The GVT has left the path of the VUT</td><td></td><td>✓</td><td>✓</td><td></td></tr></table> * The VUT must not enter the path of the GVT to achieve the pass.			
8.4.4 To ensure a safe testing environment in the CCFtap and CCCscp scenario, the test laboratory may include an avoidance action by the robot in case the AEB/FCW system fails to intervene (sufficiently). This action can be applied automatically		[3.10.8.4.4 為確保在 CCFtap 及 CCCscp 情境試驗之測試環境安全，檢測機構可在 AEB/FCW 系統未能(充分)介入時，透過機器人自動執行避免碰撞動作，該動作可在以下情況適用：](#)	

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when: - The VUT reaches the latest position at which AEB intervention could be activated to result in avoidance or significant mitigation (as applicable) and no intervention from the AEB system is detected. OEMs can provide the latest position described above, in this case, the labs may consider using them as reference to perform the avoidance action. - Lateral separation between the VUT and GVT reaches ≤ 0m during / after AEB intervention. It is at the test laboratory's discretion to select and use one of the options above to ensure a safe testing environment. If the OEM feels the avoidance action is negatively affecting the performance of their vehicle, they should consult with the test laboratory and Euro NCAP secretariat.		(1) 當受驗車輛到達 AEB 應介入卻未介入避免碰撞或減緩碰撞之最新位置，車輛業者可提供此最新位置，檢測機構可考慮作為執行避免碰撞動作之參考。 (2) 當受驗車輛與全球目標車之側向距離在 AEB 介入中/後達到小於等於 0m 時。 (3) 檢測機構有權選擇並使用上述其中一個選項來確保測試環境安全，若車輛業者認為避免碰撞動作對其車輛性能產生負面影響，應與 TNCAP 執行機構及檢測機構協調。	

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8.4.5 For manual or automatic accelerator control, it needs to be assured that during automatic brake the accelerator pedal does not result in an override of the system. The accelerator pedal needs to be released when the initial test speed is reduced by 5 km/h. There shall be no operation of other driving controls during the test, e.g. clutch or brake pedal.	8.4.3.1 For manual or automatic accelerator control, it needs to be assured that during automatic brake the accelerator pedal does not result in an override of the system.	3.10.8.4.5 不論人員駕駛或使用自動控制裝置，應確保受驗車輛自動煞車作動期間，加速踏板不應凌駕(override)煞車系統。當初始試驗速度降低 5km/h 時需釋放加速踏板，在試驗過程中，不得操作其他駕駛控制裝置，如離合器或煞車踏板。	3.10.7.4.3.1 不論人員駕駛或使用自動控制裝置，應確保受驗車輛自動煞車作動期間，加速踏板不應凌駕(override)煞車系統。
8.4.6 The CCRs and CCCscp FCW system tests should be performed using a braking robot reacting to the warning with a delay time of 1.2 seconds as per A.4 to account for driver reaction time.	8.4.3.2 The FCW system tests should be performed using a braking robot reacting to the warning with a delay time of 1.2 seconds as per A.4 to account for driver reaction time.	3.10.8.4.6 使用於 CCRs 及 CCCscp 之前方碰撞預警系統試驗之中，煞車自動控制裝置(braking robot)應於警示響起後 1.2 秒內作動，以模擬駕駛之反應時間。	3.10.7.4.3.2 使用於前方碰撞預警系統試驗之中，煞車自動控制裝置(braking robot)應於警示響起後 1.2 秒內作動，以模擬駕駛之反應時間。
8.4.6.1 Braking will be applied that results in a maximum brake level of -4 m/s^2 – 0.50 m/s^2 when applied in a non-threat situation. The particular brake profile to be applied (pedal application rate applied in 200ms (max. 400mm/s) and pedal force) shall be specified by the manufacturer. When the brake	8.4.3.3 Braking will be applied that results in a maximum brake level of -4 m/s^2 - 0.25 m/s^2 when applied in a non-threat situation. The particular brake profile to be applied (pedal application rate applied in 200ms (max. 400mm/s) and pedal force) shall be specified by the manufacturer. When the brake	3.10.8.4.6.1 在非緊急煞車時，煞車減速度最大值為-4 m/s^2 至- 4.50 m/s^2。車輛業者應提供確切的煞車踏板作動速度(於 200ms 時所施加之踏板速率（最高 400mm/s），以及控制力）。若車輛業者建議之煞車踏板作動速度高於上述規定之煞車減速度，應使用 3.10.9 之疊代步驟(iteration steps)	3.10.7.4.3.3 在非緊急煞車時，煞車減速度最大值為-4 m/s^2 至- 4.25 m/s^2。車輛業者應提供確切的煞車踏板作動速度(於 200ms 時所施加之踏板速率（最高 400mm/s），以及控制力）。若車輛業者建議之煞車踏板作動速度高於上述規定之煞車減速度，應使用 3.10.8 之疊代步驟(iteration steps)

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profile provided by the manufacturer results in a higher brake level than allowed, the iteration steps as described in ANNEX A will be applied to scale the brake level to -4 m/s^2 – 0.50 m/s^2.	profile provided by the manufacturer results in a higher brake level than allowed, the iteration steps as described in ANNEX B will be applied to scale the brake level to -4 m/s^2 - 0.25 m/s^2.	將煞車減速度調整至-4 m/s^2 至- 4.50 m/s^2。	將煞車減速度調整至-4 m/s^2 至- 4.25 m/s^2。
8.4.6.2 When no brake profile is provided, the default brake profile as described in ANNEX A will be applied.	8.4.3.4 When no brake profile is provided, the default brake profile as described in ANNEX A will be applied.	3.10.8.4.6.2 若未提供煞車設定者，則應使用 3.10.9 之預設煞車設定。	3.10.7.4.3.4 若未提供煞車設定者，則應使用 3.10.8 之預設煞車設定。
8.4.7 The ESS is evaluated at the Euro NCAP lab with input from the OEM to ensure proper triggering of the system. The recommended testing procedure can be found in the Technical Bulletin TB037.		3.10.8.4.6.3 緊急轉向輔助系統於檢測機構進行評等，並透過車輛業者提供之資料以確保系統能夠正常觸發，試驗程序參 Euro NCAP TB037。	
ANNEX A: BRAKE APPLICATION PROCEDURE The braking input characterisation test determines the brake pedal displacement and force necessary to achieve a vehicle deceleration typical of that produced by a typical real-world driver in emergency situations.	**ANNEX A BRAKE APPLICATION PROCEDURE** The braking input characterisation test determines the brake pedal displacement and force necessary to achieve a vehicle deceleration typical of that produced by a typical real world driver in emergency situations.	3.10.9 煞車應用程序 煞車輸入試驗主要藉由煞車踏板位移量與控制力，以確認真實情況下駕駛因緊急致動煞車所得之車輛減速度。	3.10.8 煞車應用程序 煞車輸入試驗主要藉由煞車踏板位移量與控制力，以確認真實情況下駕駛因緊急致動煞車所得之車輛減速度。

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A.1 Definitions	**A.1 Definitions**	3.10.9.1 名詞釋義	3.10.8.1 名詞釋義
T_{BRAKE} – The point in time where the brake pedal displacement exceeds 5mm.	**T_{BRAKE}** - The point in time where the brake pedal displacement exceeds 5mm.	3.10.9.1.1T_{BRAKE}：煞車踏板位移大於 5mm 之時間點。	3.10.8.1.1T_{BRAKE}：煞車踏板位移大於 5mm 之時間點。
T_{-6m/s^2} – The point in time is defined as the first data point where filtered, zeroed and corrected longitudinal acceleration data is less than -6m/s^2.	**T_{-6m/s^2}** - The point in time is defined as the first data point where filtered, zeroed and corrected longitudinal acceleration data is less than -6m/s^2.	3.10.9.1.2 T_{-6m/s^2}：濾波與校正後縱向加速度數據第一次出現低於-6m/s^2 數據之時間點。	3.10.8.1.2 T_{-6m/s^2}：濾波與校正後縱向加速度數據第一次出現低於-6m/s^2 數據之時間點。
T_{-2m/s^2}, **T_{-4m/s^2}** - similar to T_{-6m/s^2}.	**T_{-2m/s^2}**, **T_{-4m/s^2}** - similar to T_{-6m/s^2}.	3.10.9.1.3 T_{-2m/s^2}, T_{-4m/s^2}：與上述 T_{-6m/s^2} 相似。	3.10.8.1.3 T_{-2m/s^2}, T_{-4m/s^2}：與上述 T_{-6m/s^2} 相似。
A.2 Measurements	**A.2 Measurements**	3.10.9.2 量測	3.10.8.2 量測
Measurements and filters to be applied as described in Chapter 4 of this protocol.	Measurements and filters to be applied as described in Chapter 4 of this protocol.	量測及濾波方法應依條文 3.10.9.4 執行。	量測及濾波方法應依條文 3.10.8.4 執行。
A.3 Brake Characterization Procedure	**A.3 Brake Characterization Procedure**	3.10.9.3 煞車特性試驗程序	3.10.8.3 煞車特性試驗程序
First perform the brake and tyre conditioning tests as described in 8.1.2 and 8.1.3. The brake input characterisation tests shall be undertaken within 10 minutes after conditioning the brakes and tyres.	First perform the brake and tyre conditioning tests as described in 8.1.2 and 8.1.3. The brake input characterisation tests shall be undertaken within 10 minutes after conditioning the brakes and tyres.	依條文 3.10.8.1.2 及 3.10.8.1.3 進行煞車與輪胎調節程序。煞車輸入特性試驗應於調節煞車系統與輪胎後 10 分鐘內進行。	依條文 3.10.7.1.2 及 3.10.7.1.3 進行煞車與輪胎調節程序。煞車輸入特性試驗應於調節煞車系統與輪胎後 10 分鐘內進行。

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A.3.1 Brake Displacement Characterisation Tests	A.3.1 Brake Displacement Characterisation Tests	3.10.9.3.1 煞車位移特性試驗	3.10.8.3.1 煞車位移特性試驗
•Push the brake pedal through the full extent of travel and release.	•Push the brake pedal through the full extent of travel and release.	(1) 將煞車踩到底再釋放，讓煞車踏板回到原本位置。	(1) 將煞車踩到底再釋放，讓煞車踏板回到原本位置。
•Accelerate the VUT to a speed in excess of 85km/h. Vehicles with an automatic transmission will be driven in D. For vehicles with a manual transmission select the highest gear where the RPM will be at least 1500 at the 85km/h.	•Accelerate the VUT to a speed in excess of 85km/h. Vehicles with an automatic transmission will be driven in D. For vehicles with a manual transmission select the highest gear where the RPM will be at least 1500 at the 85km/h.	(2) 受驗車輛加速至超過 85km/h。自排變速車輛應打前進擋；手排變速車輛應選擇最高擋，速度為 85km/h 時，轉速應至少為 1500rpm。	(2) 受驗車輛加速至超過 85km/h。自排變速車輛應打前進擋；手排變速車輛應選擇最高擋，速度為 85km/h 時，轉速應至少為 1500rpm。
•Release the accelerator and allow the vehicle to coast. At a speed of 80 ± 1.0km/h initiate a ramp braking input with a pedal application rate of 20±5mm/s and apply the brake until a longitudinal acceleration of -7m/s^2 is achieved. For manual transmission vehicles, press the clutch as soon as the RPM drops below 1500. The test ends when a longitudinal acceleration of -7m/s^2 is achieved.	•Release the accelerator and allow the vehicle to coast. At a speed of 80 ± 1.0km/h initiate a ramp braking input with a pedal application rate of 20±5mm/s and apply the brake until a longitudinal acceleration of -7m/s^2 is achieved. For manual transmission vehicles, press the clutch as soon as the RPM drops below 1500. The test ends when a longitudinal acceleration of -7m/s^2 is achieved.	(3) 釋放油門踏板讓車輛滑行。速度為 80 ± 1.0km/h 時，以 20±5mm/s 的踏板速度（pedal application rate）作動煞車（ramp braking input），持續施壓，直到達到-7m/s^2 的縱向加速度。如果為手排變速車輛，轉速降至低於 1500rpm 時，立刻踩下離合器。縱向加速度達到-7m/s^2 時，試驗結束。	(3) 釋放油門踏板讓車輛滑行。速度為 80 ± 1.0km/h 時，以 20±5mm/s 的踏板速度（pedal application rate）作動煞車（ramp braking input），持續施壓，直到達到-7m/s^2 的縱向加速度。如果為手排變速車輛，轉速降至低於 1500rpm 時，立刻踩下離合器。縱向加速度達到-7m/s^2 時，試驗結束。
•Measure the pedal displacement and applied force normal to the direction of travel of the initial stroke of the	•Measure the pedal displacement and applied force normal to the direction of travel of the initial stroke of the	(4) 測量第一次踩下煞車踏板時，踏板行程的位移與控制力，或盡可能接近正常可重複達成之狀況。	(4) 測量第一次踩下煞車踏板時，踏板行程的位移與控制力，或盡可能接近正常可重複達成之狀況。

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brake pedal, or as close as possible to normal as can be repeatedly achieved.	brake pedal, or as close as possible to normal as can be repeatedly achieved.		
A.3.1.1 Perform three consecutive test runs. A minimum time of 90 seconds and a maximum time of 10 minutes shall be allowed between consecutive tests. If the maximum time of 10 minutes is exceeded, perform three brake stops from 72 km/h at approximately 0.3g.	A.3.1.1 Perform three consecutive test runs. A minimum time of 90 seconds and a maximum time of 10 minutes shall be allowed between consecutive tests. If the maximum time of 10 minutes is exceeded, perform three brake stops from 72 km/h at approximately 0.3g.	3.10.9.3.1.1 連續進行三次試驗，試驗間隔最短為 90 秒，最長為 10 分鐘。若超過 10 分鐘，則應從 72km/h 以平均減速度為 0.3ｇ 之方式執行 3 次煞停。	3.10.8.3.1.1 連續進行三次試驗，試驗間隔最短為 90 秒，最長為 10 分鐘。若超過 10 分鐘，則應從 72km/h 以平均減速度為 0.3ｇ 之方式執行 3 次煞停。
•Using second order curve fit and the least squares method between T_{-2m/s^2}, T_{-6m/s^2}, calculate the pedal travel value corresponding to a longitudinal acceleration of -4 m/s² (=D4, unit is m). Use data of at least three valid test runs for the curve fitting.	•Using second order curve fit and the least squares method between T_{-2m/s^2}, T_{-6m/s^2}, calculate the pedal travel value corresponding to a longitudinal acceleration of -4 m/s² (=D4, unit is m). Use data of at least three valid test runs for the curve fitting.	(1) 於 T_{-2m/s^2}，T_{-6m/s^2}之間，利用二階曲線擬合（second order curve fit）及最小平方法（least squares method）計算對應-4m/s²（=D4，單位為 m）之煞車踏板縱向行程值。使用至少三次有效試驗計算曲線擬合（curve fitting）。	(1) 於 T_{-2m/s^2}，T_{-6m/s^2}之間，利用二階曲線擬合（second order curve fit）及最小平方法（least squares method）計算對應-4m/s²（=D4，單位為 m）之煞車踏板縱向行程值。使用至少三次有效試驗計算曲線擬合（curve fitting）。
•This brake pedal displacement is referred to as D4 in the next chapters.	•This brake pedal displacement is referred to as D4 in the next chapters.	(2) 此煞車踏板位移於往後章節中稱為 D4。	(2) 此煞車踏板位移於往後章節中稱為 D4。
•Using second order curve fit and the least squares method between T_{-2m/s^2}, T_{-6m/s^2}, calculate the pedal force value corresponding to a longitudinal acceleration of -4 m/s² (=F4, unit is	•Using second order curve fit and the least squares method between T_{-2m/s^2}, T_{-6m/s^2}, calculate the pedal force value corresponding to a longitudinal acceleration of -4 m/s² (=F4, unit is	(3) 於 T_{-2m/s^2}，T_{-6m/s^2}之間，利用二階曲線擬合（second order curve fit）及最小平方法（least squares method）計算對應-4m/s²（=F4，單位為 N）之煞車踏板力量值。	(3) 於 T_{-2m/s^2}，T_{-6m/s^2}之間，利用二階曲線擬合（second order curve fit）及最小平方法（least squares method）計算對應-4m/s²（=F4，單位為 N）之煞車踏板力量值。

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N). Use data of at least three valid test runs for the curve fitting. •This brake pedal force is referred to as F4 in the next chapters.	N). Use data of at least three valid test runs for the curve fitting. •This brake pedal force is referred to as F4 in the next chapters.	使用至少三次有效試驗計算曲線擬合（curve fitting）。 (4) 此煞車踏板力於往後章節中稱為 F4。	使用至少三次有效試驗計算曲線擬合（curve fitting）。 (4) 此煞車踏板力於往後章節中稱為 F4。
A.3.2 Brake Force Confirmation and Iteration Procedure	A.3.2 Brake Force Confirmation and Iteration Procedure	3.10.9.3.2 煞車控制力確認及重複程序	3.10.8.3.2 煞車控制力確認及重複程序
•Accelerate the VUT to a speed of 80+1km/h. Vehicles with an automatic transmission will be driven in D. For vehicles with a manual transmission select the highest gear where the RPM will be at least 1500 at the 80km/h.	•Accelerate the VUT to a speed of 80+1km/h. Vehicles with an automatic transmission will be driven in D. For vehicles with a manual transmission select the highest gear where the RPM will be at least 1500 at the 80km/h.	(1) 受驗車輛加速至 80+1km/h 的速度。自排變速車輛應打前進擋；手排變速車輛應選擇最高擋，速度為 80km/h 時，轉速應至少為 1500rpm。	(1) 受驗車輛加速至 80+1km/h 的速度。自排變速車輛應打前進擋；手排變速車輛應選擇最高擋，速度為 80km/h 時，轉速應至少為 1500rpm。
•Apply the brake force profile as specified in B.4, triggering the input manually rather than in response to the FCW. Determine the mean acceleration achieved during the window from T_{BRAKE} +1s T_{BRAKE} +3s. If a mean acceleration outside the range of -4-0.5m/s^2 results, apply the following method to ratio the pedal force applied.	•Apply the brake force profile as specified in B.4, triggering the input manually rather than in response to the FCW. Determine the mean acceleration achieved during the window from T_{BRAKE} +1s T_{BRAKE} +3s. If a mean acceleration outside the range of -4-0.25m/s^2 results, apply the following method to ratio the pedal force applied.	(2) 依據 3.10.9.4 產出之數據，以非前方碰撞預警系統而觸發。計算 T_{BRAKE} +1s 至 T_{BRAKE} +3s 間達到之平均加速度。若計算結果超出 -4 m/s^2 至- 4.50 m/s^2，應利用以下方式計算煞車踏力。	(2) 依據 3.10.8.4 產出之數據，以非前方碰撞預警系統而觸發。計算 T_{BRAKE} +1s 至 T_{BRAKE} +3s 間達到之平均加速度。若計算結果超出 -4 m/s^2 至- 4.25 m/s^2，應利用以下方式計算煞車踏力。

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F4new = F4original * (-4/mean acceleration), i.e. if F4original results in a mean acceleration of -5m/s^2, F4new = F4original * -4 / -5	F4new = F4original * (-4/mean acceleration), i.e. if F4original results in a mean acceleration of -5m/s^2, F4new = F4original * -4 / -5	新 F4 = 原 F4 *(-4/平均加速度)，例： 若原 F4 計算結果中平均加速度為-5m/s^2，則新 F4 = 原 F4 * -4/-5	新 F4 = 原 F4 *（-4/平均加速度），例： 若原 F4 計算結果中平均加速度為-5m/s^2，則新 F4 = 原 F4 * -4/-5
•Repeat the brake force profile with this newly calculated F4, determine the mean acceleration achieved and repeat the method as necessary until a mean acceleration within the range of -4-0.5m/s^2 is achieved.	•Repeat the brake force profile with this newly calculated F4, determine the mean acceleration achieved and repeat the method as necessary until a mean acceleration within the range of -4-0.25m/s^2 is achieved.	(3) 使用計算出最新 F4 煞車力量作動煞車，並確認已達到目標加速度。可依需求，重複此步驟，直到計算出-4m/s^2 至-4.50m/s^2 範圍內之平均加速度。	(3) 使用計算出最新 F4 煞車力量作動煞車，並確認已達到目標加速度。可依需求，重複此步驟，直到計算出-4m/s^2 至-4.25m/s^2 範圍內之平均加速度。
A.3.2.1 Three valid pedal force characteristic tests (with the acceleration level being in the range as specified) are required. A minimum time of 90 seconds and a maximum time of 10 minutes shall be allowed between consecutive tests. If the maximum time of 10 minutes is exceeded, perform three brake stops from 72 km/h at approximately 0.3g.	A.3.2.1 Three valid pedal force characteristic tests (with the acceleration level being in the range as specified) are required. A minimum time of 90 seconds and a maximum time of 10 minutes shall be allowed between consecutive tests. If the maximum time of 10 minutes is exceeded, perform three brake stops from 72 km/h at approximately 0.3g.	3.10.9.3.2.1 應進行三次有效煞車踏力試驗(加速度必須達到規定之範圍)。試驗間隔最短為 90 秒，最長為 10 分鐘。若超過 10 分鐘，則應從 72km/h 以平均減速度為 0.3 g 之方式執行 3 次煞停。	3.10.8.3.2.1 應進行三次有效煞車踏力試驗(加速度必須達到規定之範圍)。試驗間隔最短為 90 秒，最長為 10 分鐘。若超過 10 分鐘，則應從 72km/h 以平均減速度為 0.3 g 之方式執行 3 次煞停。
•before restarting the brake pedal force characterisation tests. This brake pedal force is referred as F4 in the next	•before restarting the brake pedal force characterisation tests. This brake pedal force is referred as F4 in the next	(1) 在重新進行煞車踏力試驗之前，此煞車踏板力度於往後章節中稱為 F4。	(1) 在重新進行煞車踏力試驗之前，此煞車踏板力度於往後章節中稱為 F4。

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chapters.	chapters.		
A.4 Brake Application Profile	**A.4 Brake Application Profile**	3.10.9.4 煞車應用設定（Brake Application Profile）	3.10.8.4 煞車應用設定（Brake Application Profile）
•Detect T_{FCW} during the experiment in real-time.	•Detect T_{FCW} during the experiment in real-time.	(1) 於試驗中即時偵測 T_{FCW}。	(1) 於試驗中即時偵測 T_{FCW}。
•Release the accelerator at T_{FCW} + 1 s.	•Release the accelerator at T_{FCW} + 1 s.	(2) T_{FCW}+1s 時，放開加速踏板。	(2) T_{FCW}+1s 時，放開加速踏板。
•Perform displacement control for the brake pedal, starting at T_{FCW} + 1.2 s with a gradient of the lesser of 5 x D4 or 400mm/s (meaning the gradient to reach pedal position D4 within 200ms, but capped to a maximum application rate of 400mm/s).	•Perform displacement control for the brake pedal, starting at T_{FCW} + 1.2 s with a gradient of the lesser of 5 x D4 or 400mm/s (meaning the gradient to reach pedal position D4 within 200ms, but capped to a maximum application rate of 400mm/s).	(3) 進行煞車踏板之位移控制時，從 T_{FCW} +1.2s 開始，梯度(gradient)為 5 x D4 或 400mm/s（即為於 200ms 內達到踏板位置 D4 所需之梯度，但上限為 400mm/s），取較低者。	(3) 進行煞車踏板之位移控制時，從 T_{FCW} +1.2s 開始，梯度(gradient)為 5 x D4 或 400mm/s（即為於 200ms 內達到踏板位置 D4 所需之梯度，但上限為 400mm/s），取較低者。
•Monitor brake force during displacement control and use second-order filtering with a cut-off frequency between 20 and 100 Hz (online) as appropriate.	•Monitor brake force during displacement control and use second-order filtering with a cutoff frequency between 20 and 100 Hz (online) as appropriate.	(4) 位移控制期間應監控煞車力度，使用二階濾波（second-order filtering），截止頻率 20 至 100Hz。	(4) 位移控制期間應監控煞車力度，使用二階濾波（second-order filtering），截止頻率 20 至 100Hz。
•Switch to force control, maintaining the force level, with a desired value of	•Switch to force control, maintaining the force level, with a desired value of	(5) 於下述時間點轉換成目標值為 F4 之力量控制且維持力量之水	(5) 於下述時間點轉換成目標值為 F4 之力量控制且維持力量之水

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F4 when i. the value D4 as defined in B.3 is exceeded for the first time, ii. the force F4 as defined in B.3 is exceeded for the first time, whichever is reached first.	F4 when i. the value D4 as defined in B.3 is exceeded for the first time, ii. the force F4 as defined in B.3 is exceeded for the first time, whichever is reached first.	平： (A) 首次超過 3.10.8.3 中定義之 D4 位移值 (B) 首次超過 3.10.8.3 中定義之 F4 力量以先達成之條件為準。	平： (A) 首次超過 3.10.8.3 中定義之 D4 位移值 (B) 首次超過 3.10.8.3 中定義之 F4 力量以先達成之條件為準。
•The point in time where position control is switched to force control is noted as T_{switch}.	•The point in time where position control is switched to force control is noted as T_{switch}.	(6) 位移控制轉變成控制力控制之時間點為 T_{switch} 。	(6) 位移控制轉變成控制力控制之時間點為 T_{switch} 。
•Maintain the force within boundaries of F4 ± 25% F4. A stable force level should be achieved within a period of 200ms maximum after the start of force control. Additional disturbances of the force over ± 25% F4 due to further AEB interventions are allowed, as long as they have a duration of less than 200ms.	•Maintain the force within boundaries of F4 ± 25% F4. A stable force level should be achieved within a period of 200ms maximum after the start of force control. Additional disturbances of the force over ± 25% F4 due to further AEB interventions are allowed, as long as they have a duration of less than 200ms.	(7) 開始控制力量之後，應以小於 200ms 之時間達到穩定之控制力層級。力量值應維持在 F4 ±25% F4 之限值內，惟因緊急煞車輔助系統作動而造成超過± 25% F4，且持續時間小於 200ms 者不在此限。	(7) 開始控制力量之後，應以小於 200ms 之時間達到穩定之控制力層級。力量值應維持在 F4 ±25% F4 之限值內，惟因緊急煞車輔助系統作動而造成超過± 25% F4，且持續時間小於 200ms 者不在此限。
•The average value of the force between T_{FCW} + 1.4s and the end of the test should be in the range of F4 ± 10 N.	•The average value of the force between T_{FCW} + 1.4s and the end of the test should be in the range of F4 ± 10 N.	(8) T_{FCW} +1.4s 至試驗結束之間平均力量應落在 F4 ±10N 範圍內。	(8) T_{FCW} +1.4s 至試驗結束之間平均力量應落在 F4 ±10N 範圍內。

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ANNEX B: Lane Change Path Definition **70km/h Lane Change Co-ordinates**		3.10.10 變換車道情境試驗路徑定義-70km/h 變換車道座標 (請參末頁表格)	

Distance (m)	Time (s)	X-Position (m)	Y-Position (m)	Curvature (1/m)
0	0	0	0	0
1	0,051	1	0,002	0,004
2	0,103	2	0,008	0,004
3	0,154	3	0,018	0,004
4	0,206	4	0,032	0,004
5	0,257	5	0,05	0,004
6	0,309	5,999	0,072	0,004
7	0,36	6,999	0,098	0,004
8	0,411	7,999	0,128	0,004
9	0,463	8,998	0,162	0,004
10	0,514	9,997	0,2	0,004
11	0,566	10,996	0,242	0,004
12	0,617	11,995	0,288	0,004
13	0,669	12,994	0,338	0,004
14	0,72	13,993	0,392	0,004
15	0,771	14,991	0,45	0,004
16	0,823	15,989	0,512	0,004
17	0,874	16,987	0,578	0,004
18	0,926	17,984	0,648	0,004
19	0,977	18,982	0,722	0,004
20	1,029	19,979	0,8	0,004
21	1,08	20,975	0,881	0,004
22	1,131	21,972	0,967	0,004
23	1,183	22,968	1,057	0,004
24	1,234	23,963	1,151	0,004
25	1,286	24,958	1,249	0,001
26	1,337	25,953	1,348	0
27	1,389	26,949	1,447	0
28	1,44	27,944	1,546	0
29	1,491	28,939	1,645	0
30	1,543	29,934	1,743	0
31	1,594	30,929	1,842	0
32	1,646	31,924	1,941	0
33	1,697	32,919	2,04	0
34	1,749	33,914	2,139	0

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35 1,8 34,909 2,238 -0,001 36 1,851 35,904 2,336 -0,004 37 1,903 36,9 2,43 -0,004 38 1,954 37,896 2,521 -0,004 39 2,006 38,892 2,607 -0,004 40 2,057 39,889 2,69 -0,004 41 2,109 40,886 2,768 -0,004 42 2,16 41,883 2,843 -0,004 43 2,211 42,88 2,913 -0,004 44 2,263 43,878 2,98 -0,004 45 2,314 44,876 3,042 -0,004 46 2,366 45,875 3,101 -0,004 47 2,417 46,873 3,155 -0,004 48 2,469 47,872 3,206 -0,004 49 2,52 48,871 3,252 -0,004 50 2,571 49,87 3,295 -0,004 51 2,623 50,869 3,333 -0,004 52 2,674 51,868 3,368 -0,004 53 2,726 52,868 3,398 -0,004 54 2,777 53,868 3,425 -0,004 55 2,829 54,867 3,447 -0,004 56 2,88 55,867 3,466 -0,004 57 2,931 56,867 3,48 -0,004 58 2,983 57,867 3,491 -0,004 59 3,034 58,867 3,497 -0,004 60 3,086 59,867 3,5 0 **50km/h Lane Change Co-ordinates**		50km/h 變換車道座標 (請參末頁表格)	

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Distance (m) / Time (s) / X-Position (m) / Y-Position (m) / Curvature (1/m) 0 0 0 0 0 1 0,072 1 0,004 0,008 2 0,144 2 0,015 0,008 3 0,216 3 0,035 0,008 4 0,288 3,999 0,062 0,008 5 0,36 4,999 0,096 0,008 6 0,432 5,998 0,138 0,008 7 0,504 6,997 0,188 0,008 8 0,576 7,995 0,246 0,008 9 0,648 8,993 0,311 0,008 10 0,72 9,99 0,384 0,008 11 0,792 10,987 0,465 0,008 12 0,864 11,983 0,553 0,008 13 0,936 12,978 0,649 0,008 14 1,008 13,973 0,753 0,008 15 1,08 14,967 0,864 0,008 16 1,152 15,96 0,983 0,006 17 1,224 16,952 1,109 0,001 18 1,296 17,944 1,235 0 19 1,368 18,936 1,361 0 20 1,44 19,928 1,487 0 21 1,512 20,92 1,613 0 22 1,584 21,912 1,739 0 23 1,656 22,904 1,865 0 24 1,728 23,896 1,991 0 25 1,8 24,888 2,117 0 26 1,872 25,88 2,243 0 27 1,944 26,872 2,369 0 28 2,016 27,864 2,495 -0,006 29 2,088 28,857 2,615 -0,008 30 2,16 29,85 2,728 -0,008 31 2,232 30,845 2,833 -0,008 32 2,304 31,84 2,93 -0,008 33 2,376 32,836 3,02 -0,008 34 2,448 33,833 3,102 -0,008 35 2,52 34,83 3,176 -0,008 36 2,592 35,828 3,243 -0,008 37 2,664 36,826 3,302 -0,008 38 2,736 37,825 3,353 -0,008 39 2,808 38,824 3,397 -0,008 40 2,88 39,823 3,433 -0,008 41 2,952 40,823 3,461 -0,008 42 3,024 41,822 3,482 -0,008 43 3,096 42,822 3,495 -0,008 44 3,168 43,822 3,5 0			
ANNEX C: CCCscp Start from Stop The gas pedal characterization test		3.10.11 直行交匯路徑情境試驗-靜止狀態啟動	

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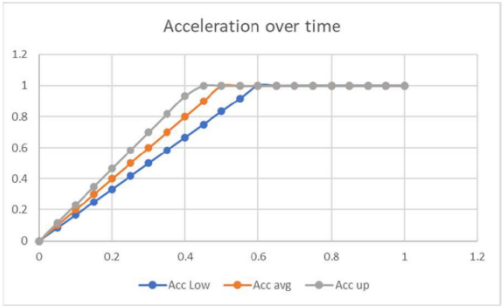
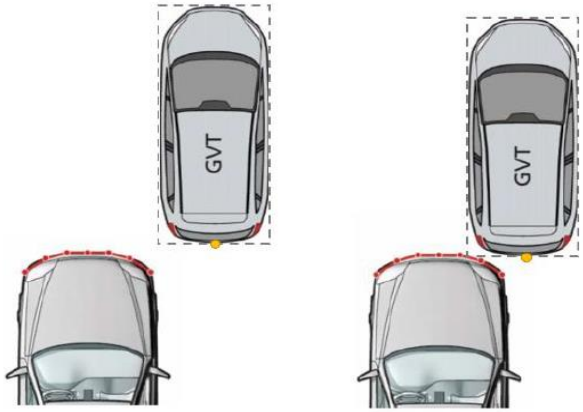
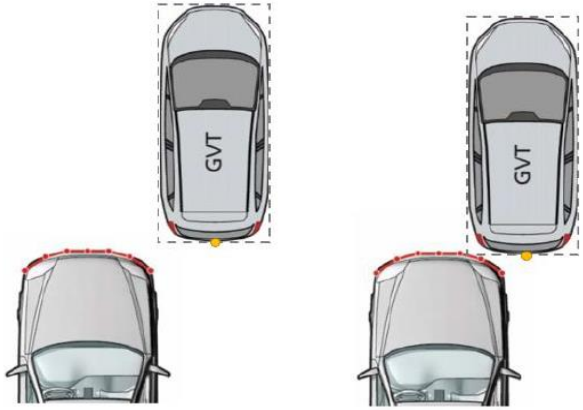
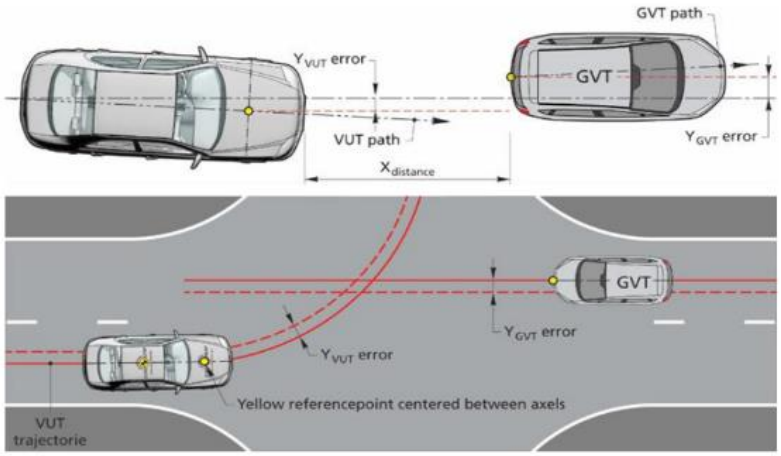
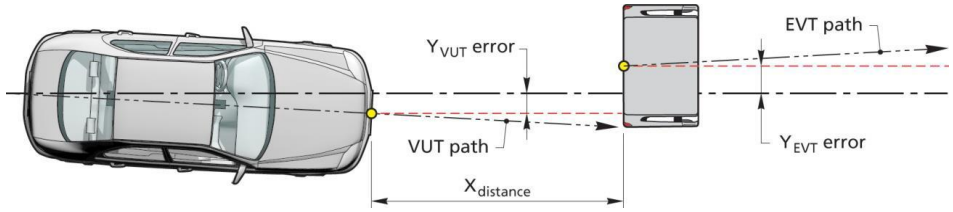
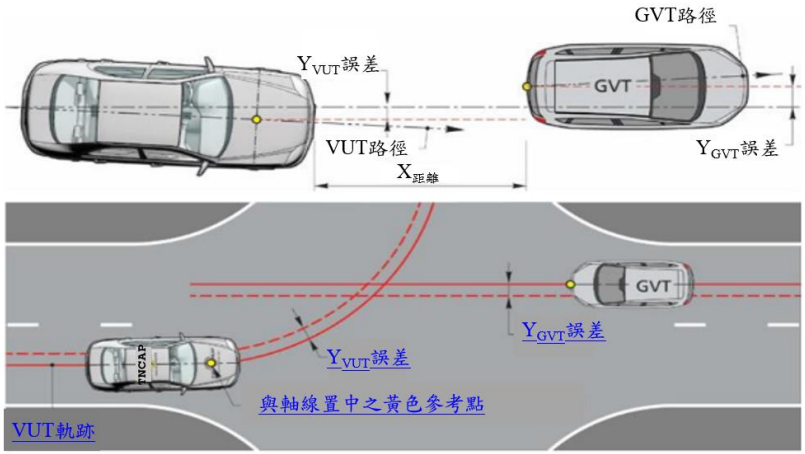
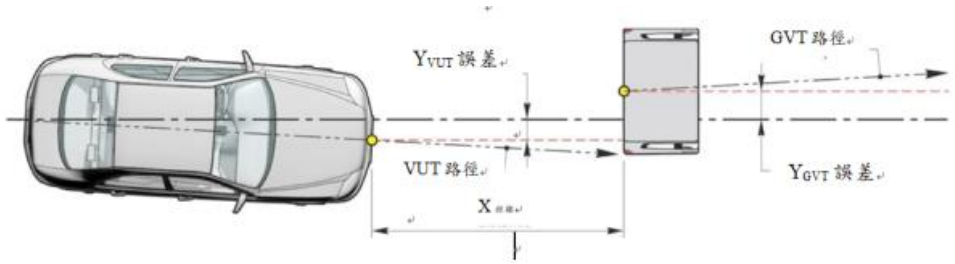
determines the gas pedal displacement and gas pedal application velocity necessary to achieve a typical vehicle drive-away acceleration in junction situations. In addition, the corresponding synchronization timing between VUT and GVT is determined with the obtained speed profile.		直行交匯路徑情境中，車輛起步加速所需之油門踏板位移及踩下速度，可透過油門踏板特性試驗程序獲得，此外，受驗車輛及全球目標車之同步時間可根據測試後之速度曲線獲得。	
C.1 Definitions		3.10.11.1 名詞釋義	
•T_{Start}, Time when VUT filtered acceleration reaches [0.1] m/s^2(in CCCscp start from stop scenario) T_{Start}		3.10.11.1.1T_{Start}：濾波後加速度達到 0.1m/s^2 之時間點(直行交匯路徑情境試驗靜止狀態啟動)。	
•T_{End}, time where VUT has travelled 2.9m. from the start position(in CCCscp start from stop scenario) T_{End}		3.10.11.1.2 T_{End}：受驗車輛自初始位置行駛 2.9m 之時間點(直行交匯路徑情境試驗靜止狀態啟動)。	
•T_{Avg}, average time value of T_{End} from all the executed trials(in CCCscp start from stop scenario) T_{Avg}		3.10.11.1.3 T_{Avg}：所有試驗中 T_{End} 之平均值(直行交匯路徑情境試驗靜止狀態啟動)。	

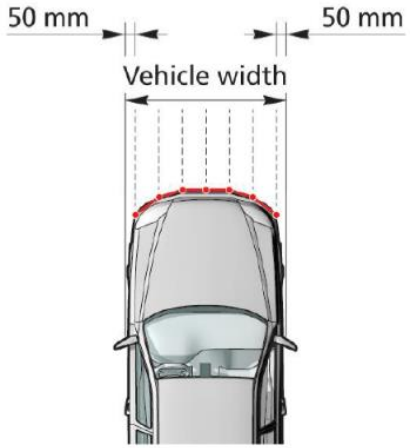
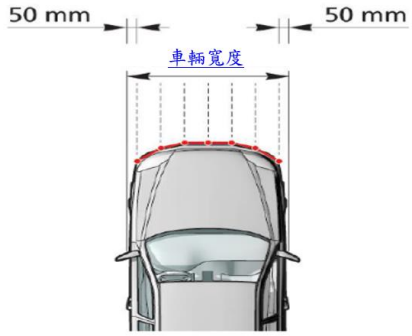
2025 AEB 試驗規章	2019 AEB 試驗規章	修訂 TNCAP 條文草案(第三版)	對應 TNCAP 條文
C.2 Measurements Measurements and filters to be applied as described in section 4 of this protocol.		3.10.11.2 量測 量測及濾波方法應依條文 3.10.4 執行。	
C.3 Gas-Pedal characterization procedure Via an iterative approach the gas pedal position has to be examined to achieve the following: •The longitudinal acceleration shall not exceed 1 m/s² before T_{Start} + 0.5 seconds. •The longitudinal acceleration shall not exceed 1.75 m/s² at any point and must exceed 1m/s² from T_{Start} + 1.25 until T_{End}.		3.10.11.3 油門踏板特性試驗程序 透過疊代方式確認油門踏板位置，以達到: (1) 在 T_{Start} + 0.5 秒前，縱向加速度不得超過 1 m/s²。 (2) 在任何時間點，縱向加速度不得超過 1.75m/s²，且從 T_{Start} + 1.25 秒直到 T_{End}，縱向加速度必須超過 1m/s²。	
Execute the start action as trial (without the GVT) at least three times. T_{End} of all runs should be inside of an Interval of [0.1 s]. The results from the trials are used to determine the gas pedal position and T_{Avg} which constitute the parameters for the test.		執行至少 3 次啟動操作試驗(不包含全球目標車)，所有試驗之 T_{End} 應為 0 秒至 1 秒區間內，試驗結果可用於確認油門踏板位置及 T_{Avg}。	

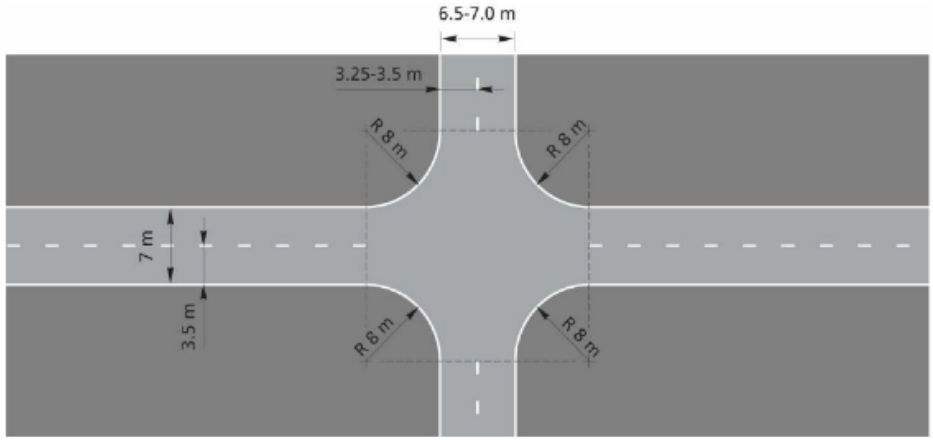
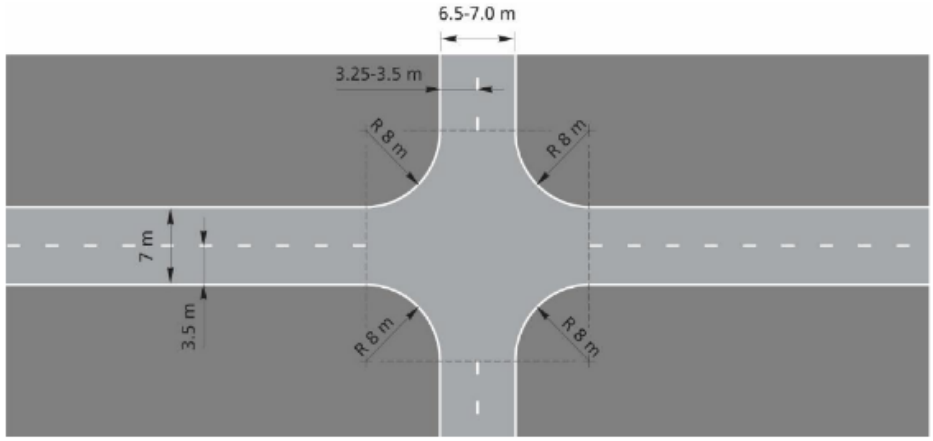
2025 AEB 試驗規章	2019 AEB 試驗規章	修訂 TNCAP 條文草案(第三版)	對應 TNCAP 條文
Thereby, T_{Avg} is used to trigger the start action of the VUT to ensure correct synchronization to the GVT. With the known time that the VUT needs to reach the impact location, it can be triggered by the approaching GVT and its known time to reach the impact point location.  In the event that the above method does not satisfy the test requirements, or that the intended vehicle to be tested (i.e. vehicle with base safety pack) is only offered with a manual transmission and has CCCscp Start-from-Stop capabilities, the OEM shall contact Euro NCAP to discuss an alternative approach.		T_{Avg} 可用於觸發受驗車輛之啟動操作，以確保與全球目標車同步，根據受驗車輛到達碰撞點之已知時間，可透過全球目標車及其到達碰撞點之已知時間進行觸發。 (請參末頁圖示) 若上述方法不符合試驗需求，或計畫進行試驗之車輛(即配備基礎安全套件之車輛)僅提供手排變速箱並具備直行交匯路徑情境試驗靜止狀態啟動功能，則車輛業者應與 TNCAP 執行機構及檢測機構共同討論替代方案。	

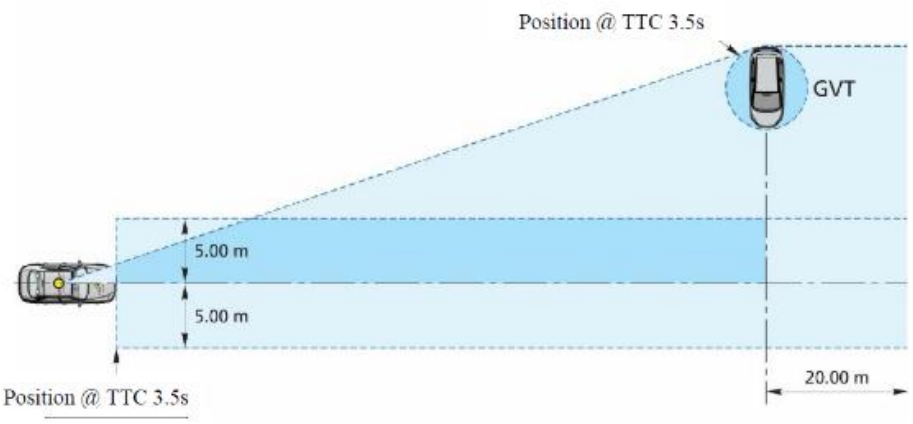
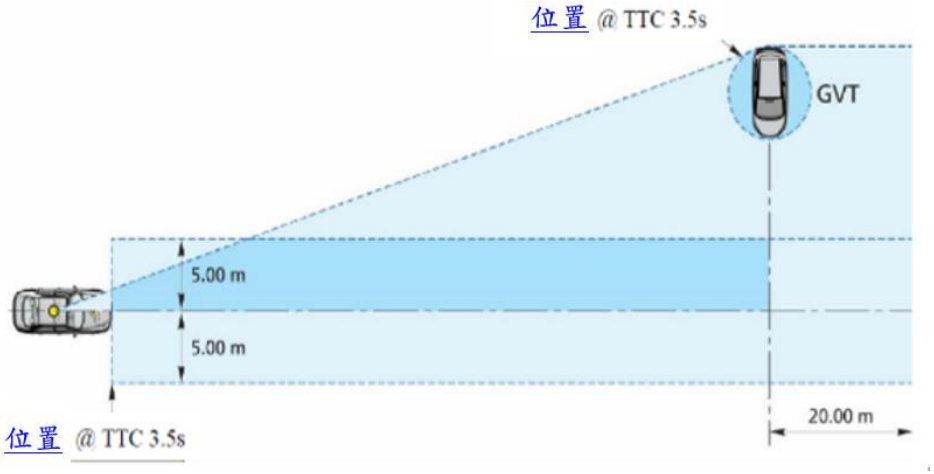
修正後	修正前
2 DEFINITIONS  Figure 2-1 Front end profile and GVT 3.10.1.12  圖1：車頭標示線與全球目標車	

修正後	修正前
3.2.1 <table><tr><th>VUT speed</th><th>GVT speed</th><th>$X_{VUT, desired}$</th><th>X_{GVT}</th></tr><tr><td rowspan="3">10 km/h</td><td>30 km/h</td><td rowspan="3">- 9.57 m</td><td>29.17 m</td></tr><tr><td>45 km/h</td><td>43.75 m</td></tr><tr><td>60 km/h</td><td>58.33 m</td></tr><tr><td rowspan="3">15 km/h</td><td>30 km/h</td><td rowspan="3">- 14.53 m</td><td>29.17 m</td></tr><tr><td>45 km/h</td><td>43.75 m</td></tr><tr><td>60 km/h</td><td>58.33 m</td></tr><tr><td rowspan="3">20 km/h</td><td>30 km/h</td><td rowspan="3">- 19.47 m</td><td>29.17 m</td></tr><tr><td>45 km/h</td><td>43.75 m</td></tr><tr><td>60 km/h</td><td>58.33 m</td></tr></table> 3.10.3.2.1 <table><tr><th>受驗車輛速度</th><th>全球目標車速度</th><th>$X_{VUT期望}$</th><th>X_{GVT}</th></tr><tr><td rowspan="3">10 km/h</td><td>30 km/h</td><td rowspan="3">- 9.57 m</td><td>29.17 m</td></tr><tr><td>45 km/h</td><td>43.75 m</td></tr><tr><td>60 km/h</td><td>58.33 m</td></tr><tr><td rowspan="3">15 km/h</td><td>30 km/h</td><td rowspan="3">- 14.53 m</td><td>29.17 m</td></tr><tr><td>45 km/h</td><td>43.75 m</td></tr><tr><td>60 km/h</td><td>58.33 m</td></tr><tr><td rowspan="3">20 km/h</td><td>30 km/h</td><td rowspan="3">- 19.47 m</td><td>29.17 m</td></tr><tr><td>45 km/h</td><td>43.75 m</td></tr><tr><td>60 km/h</td><td>58.33 m</td></tr></table>	

修正後	修正前
3.3.1  Figure 3-2: Lateral path error	3.2.1  Figure 2: Lateral path error
3.10.3.3.1  圖3：側向偏移量	3.10.2.2.1  圖2：側向偏移量

修正後	修正前
3.5.1  Figure 3-4 VUT Front bumper profile 3.10.3.5.1  圖5:車頭之虛擬標示線	
7.1.4.1	

修正後	修正前
 Figure 7-1: Layout of junction and the connecting lanes 3.10.7.1.4.1  圖7：道路交匯處與車道之示意圖	
7.3.1	

修正後	修正前
 Figure 7-3: Free space requirements – CCC Farside Test 3.10.7.3.1  圖8：空曠場地要求-直行交匯路徑情境遠端(farside)試驗	
8.2.2.1	8.2.3

修正後

Figure 8-1: CCRs scenario

	AEB + FCW combined		AEB only	FCW only
	AEB	FCW		
AEB CCRs	10-50 km/h -50% to 50%	55-80 km/h -50% to 50%	10-80 km/h -50% to 50%	55-80 km/h -50% to 50%

3.10.8.2.2.1

	AEB + FCW整合		僅有AEB	僅有FCW
	AEB	FCW		
緊急煞車輔助之前車靜止情境試驗	10-50 km/h -50% to 50%	55-80 km/h -50% to 50%	10-80 km/h -50% to 50%	55-80 km/h -50% to 50%

8.2.2.2

	AEB + FCW combined & AEB Only
	AEB
AEB CCRm	30-80 km/h -50%-50%

3.10.8.2.2.2

修正前

	CCRs			
	AEB + FCW combined		AEB only	FCW only
	AEB	FCW		
AEB City	10-50 km/h -50%-50%	-	10-50 km/h -50%-50%	-
AEB Inter-Urban	-	30-80 km/h -50%-50%	30-80 km/h -50%-50%	30-80 km/h -50%-50%

3.10.7.2.3

	前車靜止情境試驗(CCRs)			
	AEB + FCW整合		僅有AEB	僅有FCW
	AEB	FCW		
緊急煞車輔助之市區系統	10-50 km/h -50%-50%	-	10-50 km/h -50%-50%	-
緊急煞車輔助之快速道路系統	-	30-80 km/h -50%-50%	30-80 km/h -50%-50%	30-80 km/h -50%-50%

8.2.3

	CCRm			
	AEB + FCW combined		AEB only	FCW only
	AEB	FCW		
AEB Inter-Urban	30-80 km/h -50%-50%	50-80 km/h -50%-50%	30-80 km/h -50%-50%	50-80 km/h -50%-50%

3.10.7.2.3

修正後

	AEB + FCW整合及僅有AEB
	AEB
緊急煞車輔助之前車移動情境試驗	30-80 km/h -50%-50%

8.2.2.3

		AEB+FCW combined & AEB only	
		-2 m/s²	-6 m/s²
AEB CCRb	12m	50 km/h	50 km/h
	40m	50 km/h	50 km/h

3.10.8.2.2.3

		AEB+FCW整合 僅有AEB	
		-2 m/s²	-6 m/s²
緊急煞車輔助之前車煞車情境試驗	12m	50 km/h	50 km/h
	40m	50 km/h	50 km/h

8.2.3.2

修正前

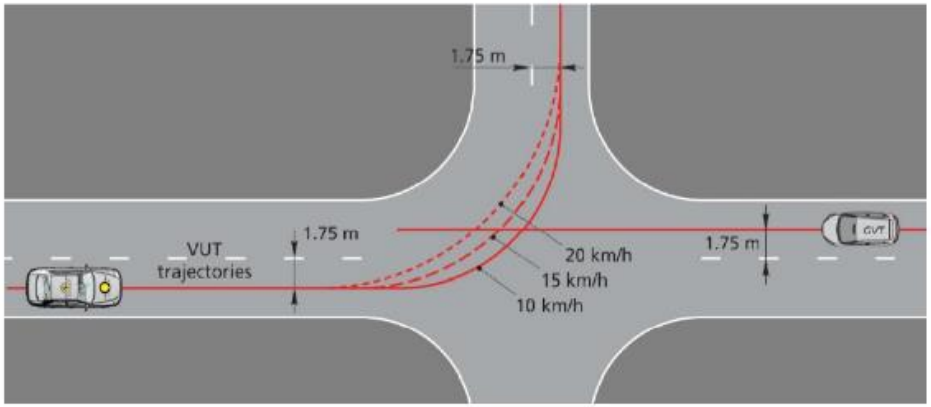
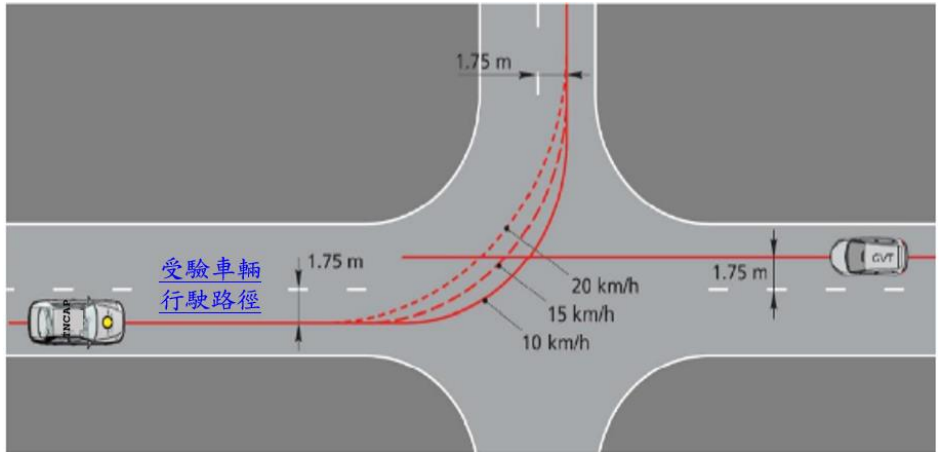
	前車移動情境試驗(CCRm)			
	AEB + FCW整合		僅有	僅有
	AEB	FCW	AEB	FCW
緊急煞車輔助之快速道路系統	30-80 km/h -50%-50%	50-80 km/h -50%-50%	30-80 km/h -50%-50%	50-80 km/h -50%-50%

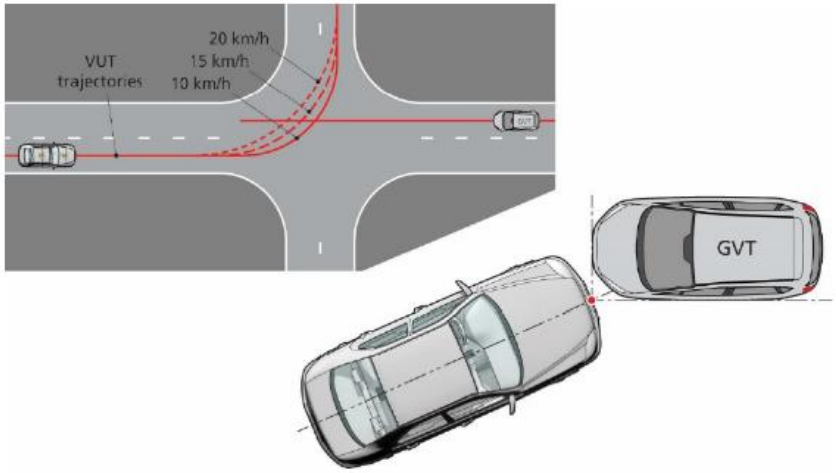
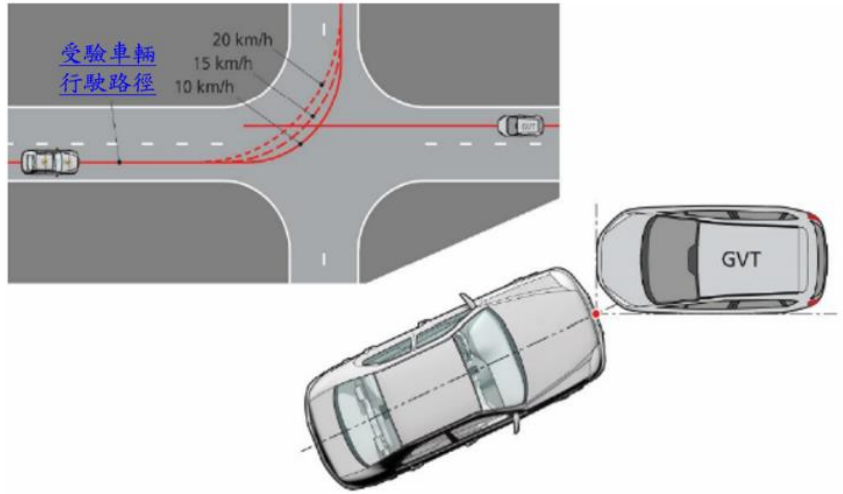
8.2.3

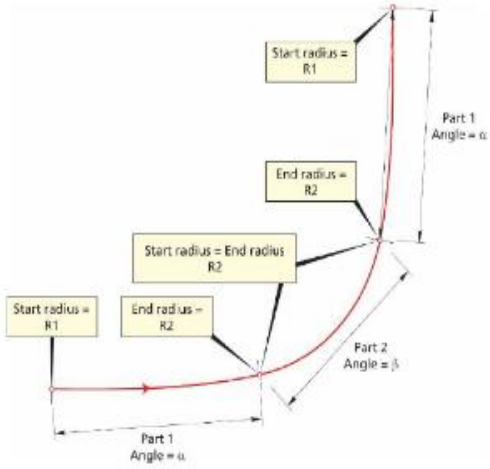
		CCRb	
		AEB+FCW combined, AEB only & FCW only	
		2 m/s²	6 m/s²
AEB Inter-Urban	12m	50 km/h	50 km/h
	40m	50 km/h	50 km/h

3.10.7.2.4

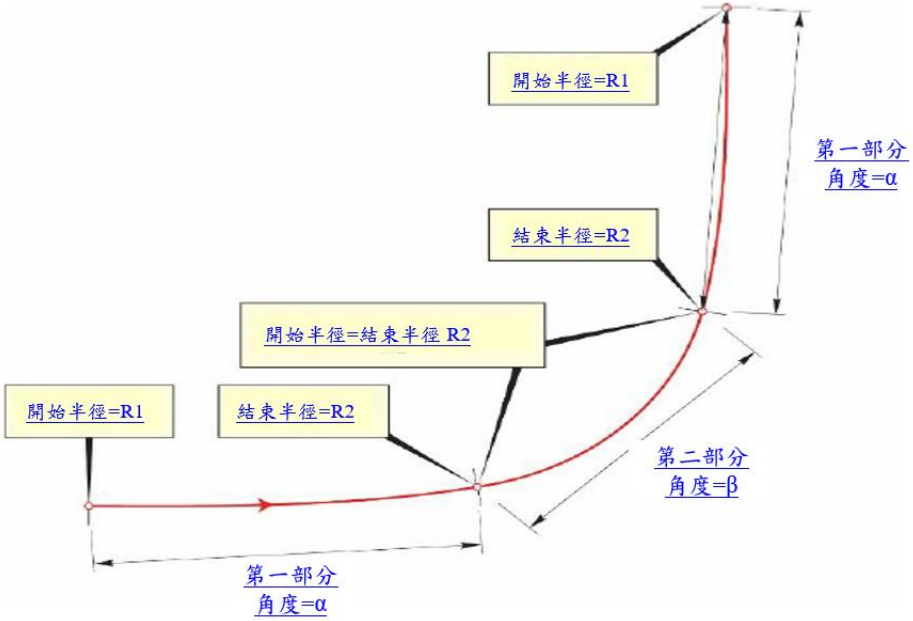
		前車煞車情境試驗(CCRb)	
		AEB+FCW整合 僅有AEB、僅有FCW	
		2 m/s²	6 m/s²
緊急煞車輔助之快速道路系統	12m	50 km/h	50 km/h
	40m	50 km/h	50 km/h

修正後	修正前
 Figure 8-4: CCFtap scenario VUT and GVT paths 3.10.8.2.3.2  圖13：轉彎穿越路徑情境試驗-受驗車輛與全球目標車行駛路徑	
8.2.3.3	

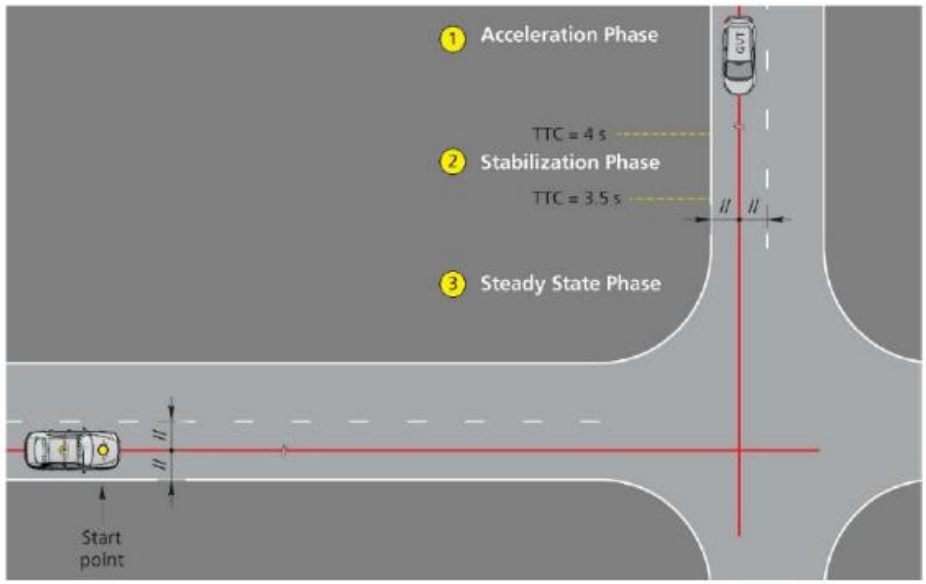
修正後	修正前
 Figure 8-5: CCFtap scenario paths and impact definition 3.10.8.2.3.3  圖14：轉彎穿越路徑情境試驗-行駛路徑與碰撞定義	
8.2.3.5	

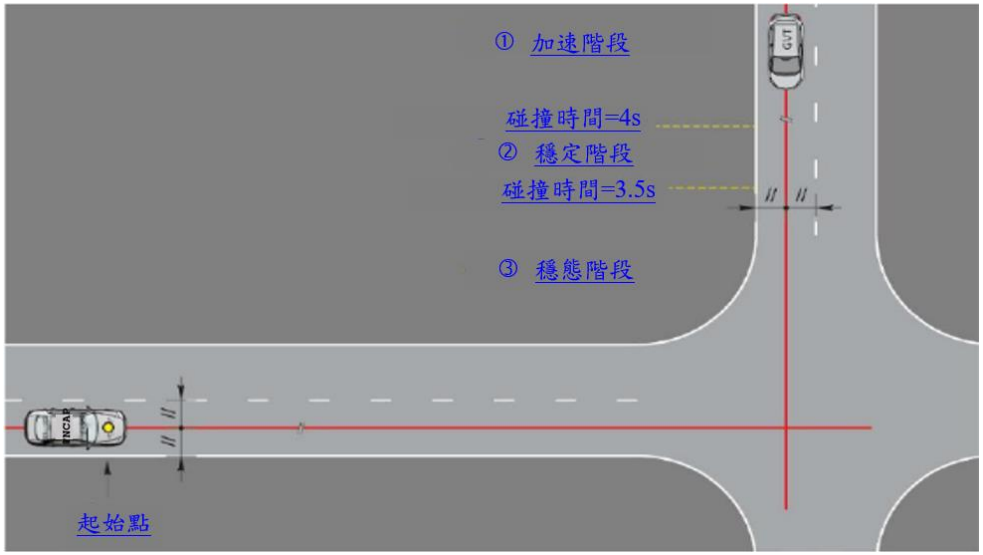
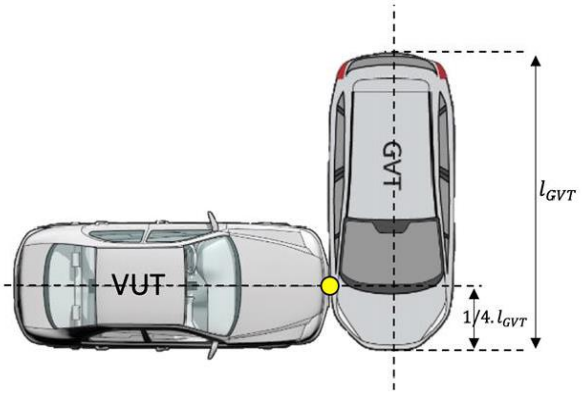
修正後	修正前
 **Test speed** / **Part 1 (clothoid)** / **Part 2 (constant radius)** / **Part 3 (clothoid)** Start Radius R1 [m] / End Radius R2 [m] / Angle α [deg] / Start Radius R2 [m] / End Radius R2 [m] / Angle β [deg] / Start Radius R2 [m] / End Radius R1 [m] / Angle α [deg] 10 km/h: 1500 / 9.00 / 20.62 / 9.00 / 9.00 / 48.76 / 9.00 / 1500 / 20.62 15 km/h: 1500 / 11.75 / 20.93 / 11.75 / 11.75 / 48.14 / 11.75 / 1500 / 20.93 20 km/h: 1500 / 14.75 / 21.79 / 14.75 / 14.75 / 46.42 / 14.75 / 1500 / 21.79 Figure 8-6: CCFtap scenario paths definition 3.10.8.2.3.5	

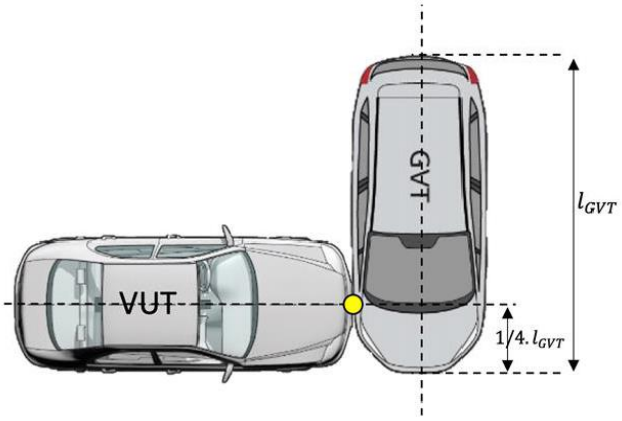
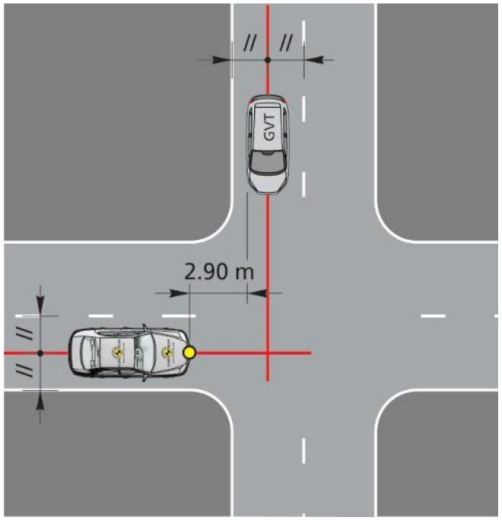
修正後	修正前



試驗速度	第一部分 (迴旋)			第二部分 (固定半徑)			第三部分 (迴旋)		
	開始半徑 R1 [m]	結束半徑 R2 [m]	角度 α [deg]	開始半徑 R2 [m]	結束半徑 R2 [m]	角度 β [deg]	開始半徑 R2 [m]	結束半徑 R1 [m]	角度 α [deg]
10 km/h	1500	9.00	20.62	9.00	9.00	48.76	9.00	1500	20.62
15 km/h	1500	11.75	20.93	11.75	11.75	48.14	11.75	1500	20.93
20	1500	14.75	21.79	14.75	14.75	46.42	14.75	1500	21.79

修正後	修正前
km/h	
圖15：轉彎穿越路徑情境試驗-行駛路徑定義	
8.2.4.4  Figure 8-7 Straight Crossing Path VUT and GVT paths 3.10.8.2.4.4	

修正後	修正前
 圖16：直行交匯路徑情境試驗-受驗車輛與全球目標車行駛路徑  Figure 8-8 SCP Impact point definition	

修正後	修正前
 圖17：直行交匯路徑情境試驗碰撞點定義	
8.2.4.5  Figure 8-9 SCP start from stop setup 3.10.8.2.4.5	

<table>
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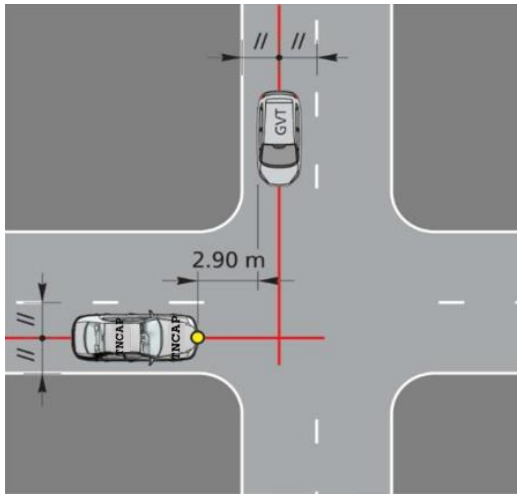
<tr><td> 

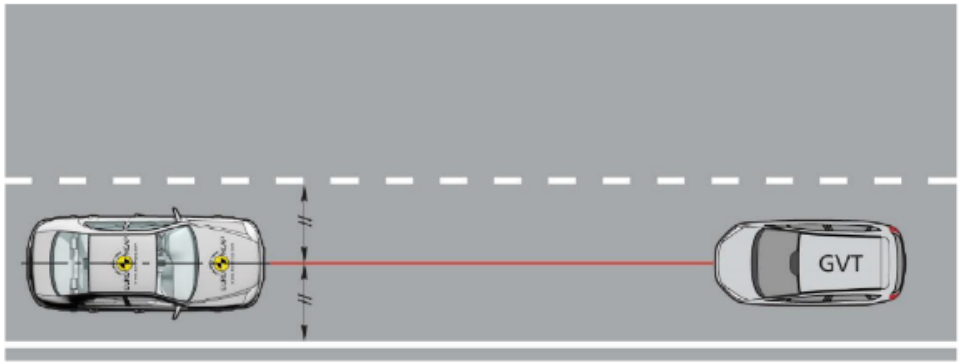
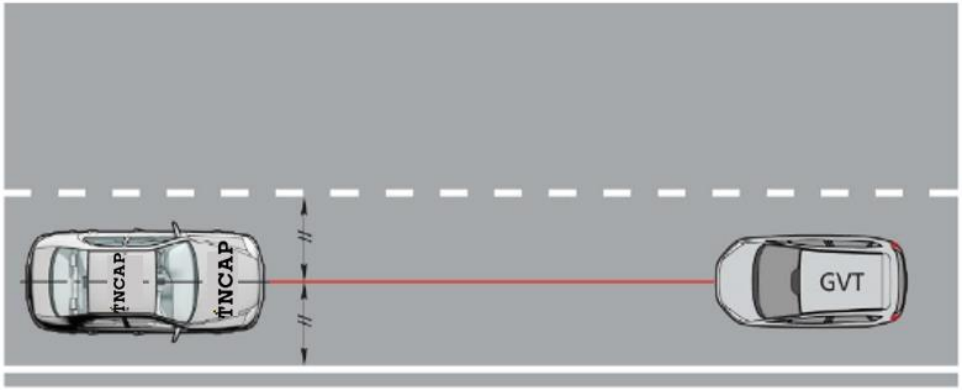
圖18：直行交匯路徑-靜止狀態啟動情境設定</td><td></td></tr>
<tr><td>8.2.4.6
<table>
<tr><td>VUT</td><td colspan="5">GVT</td></tr>
<tr><td></td><td>20 km/h</td><td>30 km/h</td><td>40 km/h</td><td>50 km/h</td><td>60 km/h</td></tr>
<tr><td>Start from stop</td><td>AEB</td><td>AEB</td><td>AEB</td><td>AEB</td><td>AEB</td></tr>
<tr><td>20 km/h</td><td>AEB</td><td>AEB</td><td>AEB</td><td>AEB</td><td>AEB</td></tr>
<tr><td>30 km/h</td><td>AEB</td><td>AEB</td><td>AEB</td><td>AEB</td><td>AEB</td></tr>
<tr><td>40 km/h</td><td>AEB/FCW</td><td>AEB/FCW</td><td>AEB/FCW</td><td>AEB/FCW</td><td>AEB/FCW</td></tr>
<tr><td>50</td><td>AEB/FCW</td><td>AEB/FCW</td><td>AEB/FCW</td><td>AEB/FCW</td><td>AEB/FCW</td></tr>
</table></td><td></td></tr>
</table>

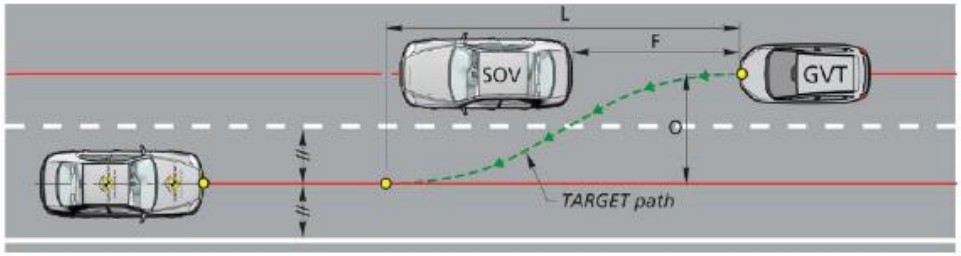
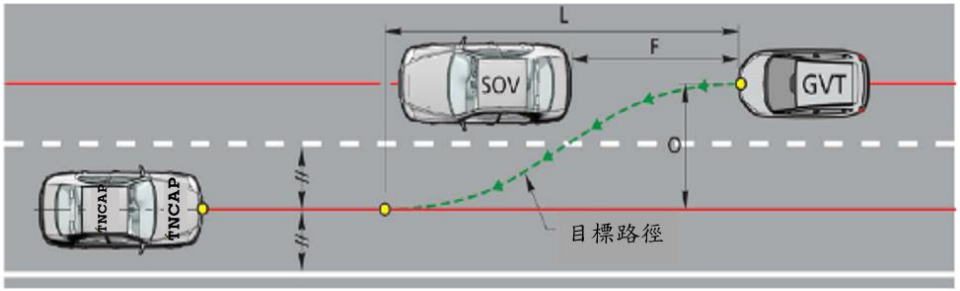
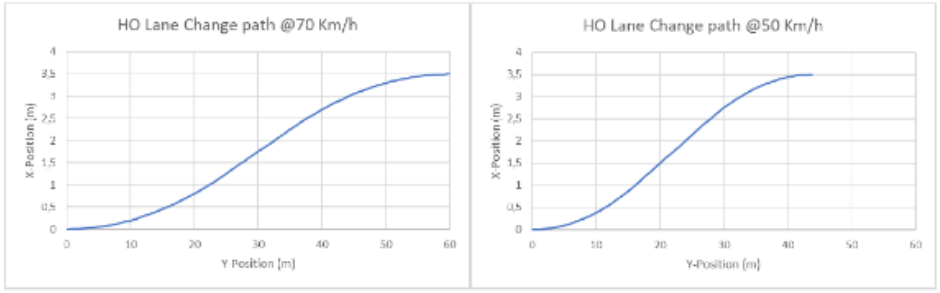
修正後	修正前
km/h					
60 km/h	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW

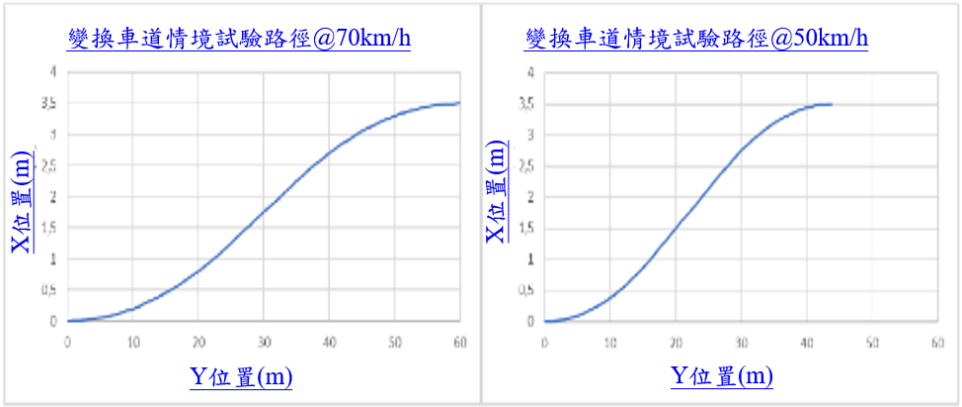
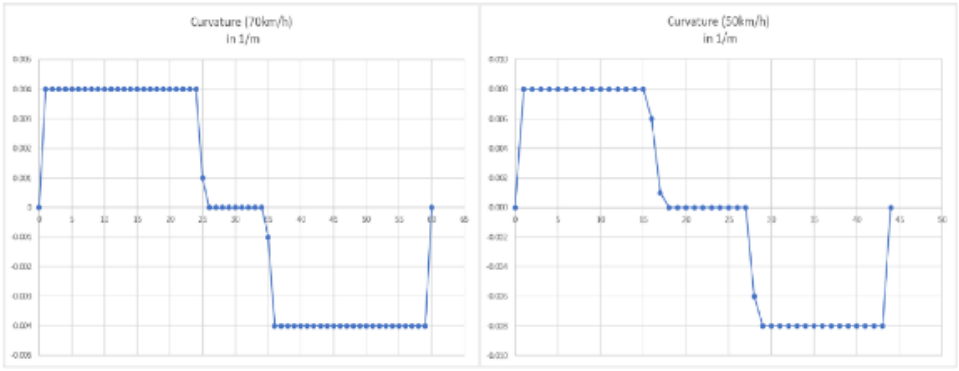
3.10.8.2.4.6

受驗車輛	全球目標車				
	20 km/h	30 km/h	40 km/h	50 km/h	60 km/h
靜止狀態啟動	AEB	AEB	AEB	AEB	AEB
20 km/h	AEB	AEB	AEB	AEB	AEB
30 km/h	AEB	AEB	AEB	AEB	AEB
40 km/h	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW
50 km/h	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW
60 km/h	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW	AEB/FCW

8.2.5.7

修正後	修正前
 Figure 8-10 CCFhos 3.10.8.2.5.7  圖19：前方對向來車直行情境試驗	

修正後	修正前
 Figure 8-11 CCFhol  圖20：前方對向來車變換車道情境試驗  Figure 8-12 CCFhol path at 70 and 50 km/h	

修正後	修正前
 圖21：前方對向來車變換車道情境試驗-70km/h及50km/h路徑  Figure 8-13 CCFhol curvature values at 70 and 50 km/h	

修正後

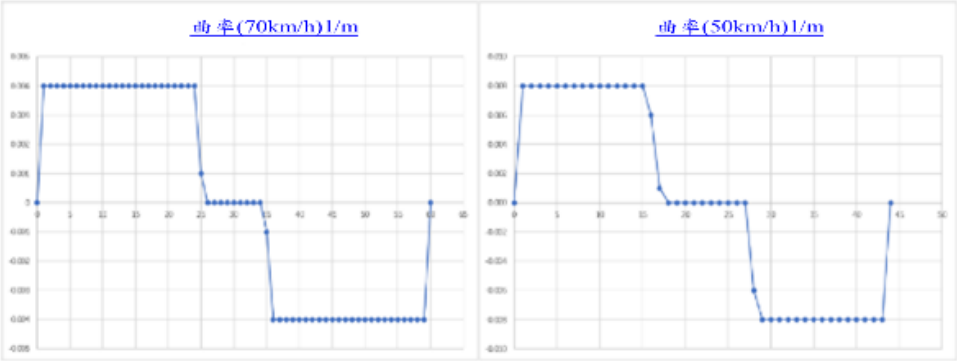


圖22：前方對向來車變換車道情境試驗-70km/h及50km/h曲率

GVT Speed	VUT Speed	Lane change offset (O)	Lane change length (L)	Following Distance (F)	TTC at end of lane change	Max Lateral acceleration
50 km/h	50 km/h	3.5 m	44 m	[13.9] m	[1.5] s	1.50 m/s²
70 km/h	70 km/h	3.5 m	60 m	[19.4] m	[1.5] s	1.50 m/s²

全球目標車速度	受驗車輛速度	變換車道偏移距離(O)	變換車道長度(L)	全球目標車與其他次要車輛距離(F)	變換車道結束時之碰撞時間	最大側向加速度
50 km/h	50 km/h	3.5 m	44 m	[13.9] m	[1.5] s	1.50 m/s²
70	70	3.5 m	60 m	[19.4] m	[1.5] s	1.50

修正前

修正後	修正前

km/h	km/h					m/s²

8.4.2

	Remark	VUT	GVT
Speed [km/h]	Constant state	+ 1.0	± 1.0
	Deceleration state		± 0.5
Lateral deviation [m]	CCR, CCCscp, CCFhos, CCFhol0	0 ± 0.05	0 ± 0.10
	CCFtap(initial straight-line path)	0 ± 0.05	
	CCFtap(turn)	0 ± 0.10	
Relative distance VUT and GVT	CCRb only	12m or 40m ± 0.5m	
Yaw velocity	CCFtap (until T_{steer})	0 ± 1.0 °/s	
Steering wheel velocity	CCFtap (until T_{steer})	0 ± 15.0 °/s	

3.10.8.4.2

	備註	受驗車輛	全球目標車
速度[km/h]	穩定狀態	+ 1.0	± 1.0
	減速狀態		± 0.5
側向偏移距離[m]	CCR, CCCscp, CCFhos, CCFhol0	0 ± 0.05	0 ± 0.10

修正後				修正前
	CCFtap(初始直線路徑)	0 ± 0.05		
	CCFtap(轉彎)	0 ± 0.10		
受驗車輛與全球目標車相對距離[m]	僅有CCRb	12或40 ± 0.5		
橫擺角速度	CCFtap(直到T_{steer})[°/s]	0 ± 1.0		
方向盤轉速	CCFtap(直到T_{steer})[°/s]	0 ± 15.0		

8.4.3

	CCRs/m/b	CCFtap	CCCscp	CCFhos/hol
V_{VUT} = 0km/h	✓	✓*	✓	✓
V_{VUT} < V_{GVT} for CCR	✓			
Contact between VUT and GVT	✓	✓	✓	✓
The GVT has left the path of the VUT		✓	✓	

* The VUT must not enter the path of the GVT to achieve the pass.

3.10.8.4.3

	CCRs/m/b	CCFtap	CCCscp	CCFhos/hol
V_{VUT} = 0km/h	✓	✓*	✓	✓
V_{VUT} < V_{GVT} (對於CCR)	✓			
受驗車輛與全球目標車發生碰撞	✓	✓	✓	✓

修正後	修正前

全球目標車偏移受驗車輛之路徑		✓	✓	

*受驗車輛不得進入全球目標車之路徑才能通過試驗

ANNEX B

Distance (m)	Time (s)	X-Position (m)	Y-Position (m)	Curvature (1/m)
0	0	0	0	0
1	0.051	1	0.002	0.004
2	0.103	2	0.008	0.004
3	0.154	3	0.018	0.004
4	0.206	4	0.032	0.004
5	0.257	5	0.05	0.004
6	0.309	5.999	0.072	0.004
7	0.36	6.999	0.098	0.004
8	0.411	7.999	0.128	0.004
9	0.463	8.998	0.162	0.004
10	0.514	9.997	0.2	0.004
11	0.566	10.996	0.242	0.004
12	0.617	11.995	0.288	0.004
13	0.669	12.994	0.338	0.004
14	0.72	13.993	0.392	0.004
15	0.771	14.991	0.45	0.004
16	0.823	15.989	0.512	0.004

修正後					修正前
17	0.874	16.987	0.578	0.004	
18	0.926	17.984	0.648	0.004	
19	0.977	18.982	0.722	0.004	
20	1.029	19.979	0.8	0.004	
21	1.08	20.975	0.881	0.004	
22	1.131	21.972	0.967	0.004	
23	1.183	22.968	1.057	0.004	
24	1.234	23.963	1.151	0.004	
25	1.286	24.958	1.249	0.001	
26	1.337	25.953	1.348	0	
27	1.389	26.949	1.447	0	
28	1.44	27.944	1.546	0	
29	1.491	28.939	1.645	0	
30	1.543	29.934	1.743	0	
31	1.594	30.929	1.842	0	
32	1.646	31.924	1.941	0	
33	1.697	32.919	2.04	0	
34	1.749	33.914	2.139	0	
35	1.8	34.909	2.238	-0.001	
36	1.851	35.904	2.336	-0.004	
37	1.903	36.9	2.43	-0.004	
38	1.954	37.896	2.521	-0.004	
39	2.006	38.892	2.607	-0.004	
40	2.057	39.889	2.69	-0.004	

修正後					修正前
41	2.109	40.886	2.768	-0.004	
42	2.16	41.883	2.843	-0.004	
43	2.211	42.88	2.913	-0.004	
44	2.263	43.878	2.98	-0.004	
45	2.314	44.876	3.042	-0.004	
46	2.366	45.875	3.101	-0.004	
47	2.417	46.873	3.155	-0.004	
48	2.469	47.872	3.206	-0.004	
49	2.52	48.871	3.252	-0.004	
50	2.571	49.87	3.295	-0.004	
51	2.623	50.869	3.333	-0.004	
52	2.674	51.868	3.368	-0.004	
53	2.726	52.868	3.398	-0.004	
54	2.777	53.868	3.425	-0.004	
55	2.829	54.867	3.447	-0.004	
56	2.88	55.867	3.466	-0.004	
57	2.931	56.867	3.48	-0.004	
58	2.983	57.867	3.491	-0.004	
59	3.034	58.867	3.497	-0.004	
60	3.086	59.867	3.5	0	

Distance (m)	Time (s)	X-Position (m)	Y-Position (m)	Curvature (1/m)
0	0	0	0	0

修正後					修正前
1	0.072	1	0.004	0.008	
2	0.144	2	0.015	0.008	
3	0.216	3	0.035	0.008	
4	0.288	3.999	0.062	0.008	
5	0.36	4.999	0.096	0.008	
6	0.432	5.998	0.138	0.008	
7	0.504	6.997	0.188	0.008	
8	0.576	7.995	0.246	0.008	
9	0.648	8.993	0.311	0.008	
10	0.72	9.99	0.384	0.008	
11	0.792	10.987	0.465	0.008	
12	0.864	11.983	0.553	0.008	
13	0.936	12.978	0.649	0.008	
14	1.008	13.973	0.753	0.008	
15	1.08	14.967	0.864	0.008	
16	1.152	15.96	0.983	0.006	
17	1.224	16.952	1.109	0.001	
18	1.296	17.944	1.235	0	
19	1.368	18.936	1.361	0	
20	1.44	19.928	1.487	0	
21	1.512	20.92	1.613	0	
22	1.584	21.912	1.739	0	
23	1.656	22.904	1.865	0	
24	1.728	23.896	1.991	0	

修正後					修正前
25	1.8	24.888	2.117	0	
26	1.872	25.88	2.243	0	
27	1.944	26.872	2.369	0	
28	2.016	27.864	2.495	-0.006	
29	2.088	28.857	2.615	-0.008	
30	2.16	29.85	2.728	-0.008	
31	2.232	30.845	2.833	-0.008	
32	2.304	31.84	2.93	-0.008	
33	2.376	32.836	3.02	-0.008	
34	2.448	33.833	3.102	-0.008	
35	2.52	34.83	3.176	-0.008	
36	2.592	35.828	3.243	-0.008	
37	2.664	36.826	3.302	-0.008	
38	2.736	37.825	3.353	-0.008	
39	2.808	38.824	3.397	-0.008	
40	2.88	39.823	3.433	-0.008	
41	2.952	40.823	3.461	-0.008	
42	3.024	41.822	3.482	-0.008	
43	3.096	42.822	3.495	-0.008	
44	3.168	43.822	3.5	0	

修正後	修正前

3.10.10

距離 (m)	時間 (s)	X位置 (m)	Y位置 (m)	曲率 (1/m)
0	0	0	0	0
1	0.051	1	0.002	0.004
2	0.103	2	0.008	0.004
3	0.154	3	0.018	0.004
4	0.206	4	0.032	0.004
5	0.257	5	0.05	0.004
6	0.309	5.999	0.072	0.004
7	0.36	6.999	0.098	0.004
8	0.411	7.999	0.128	0.004
9	0.463	8.998	0.162	0.004
10	0.514	9.997	0.2	0.004
11	0.566	10.996	0.242	0.004
12	0.617	11.995	0.288	0.004
13	0.669	12.994	0.338	0.004
14	0.72	13.993	0.392	0.004
15	0.771	14.991	0.45	0.004
16	0.823	15.989	0.512	0.004
17	0.874	16.987	0.578	0.004
18	0.926	17.984	0.648	0.004
19	0.977	18.982	0.722	0.004
20	1.029	19.979	0.8	0.004
21	1.08	20.975	0.881	0.004

修正後					修正前
22	1.131	21.972	0.967	0.004	
23	1.183	22.968	1.057	0.004	
24	1.234	23.963	1.151	0.004	
25	1.286	24.958	1.249	0.001	
26	1.337	25.953	1.348	0	
27	1.389	26.949	1.447	0	
28	1.44	27.944	1.546	0	
29	1.491	28.939	1.645	0	
30	1.543	29.934	1.743	0	
31	1.594	30.929	1.842	0	
32	1.646	31.924	1.941	0	
33	1.697	32.919	2.04	0	
34	1.749	33.914	2.139	0	
35	1.8	34.909	2.238	-0.001	
36	1.851	35.904	2.336	-0.004	
37	1.903	36.9	2.43	-0.004	
38	1.954	37.896	2.521	-0.004	
39	2.006	38.892	2.607	-0.004	
40	2.057	39.889	2.69	-0.004	
41	2.109	40.886	2.768	-0.004	
42	2.16	41.883	2.843	-0.004	
43	2.211	42.88	2.913	-0.004	
44	2.263	43.878	2.98	-0.004	
45	2.314	44.876	3.042	-0.004	

修正後	修正前

46	2.366	45.875	3.101	-0.004
47	2.417	46.873	3.155	-0.004
48	2.469	47.872	3.206	-0.004
49	2.52	48.871	3.252	-0.004
50	2.571	49.87	3.295	-0.004
51	2.623	50.869	3.333	-0.004
52	2.674	51.868	3.368	-0.004
53	2.726	52.868	3.398	-0.004
54	2.777	53.868	3.425	-0.004
55	2.829	54.867	3.447	-0.004
56	2.88	55.867	3.466	-0.004
57	2.931	56.867	3.48	-0.004
58	2.983	57.867	3.491	-0.004
59	3.034	58.867	3.497	-0.004
60	3.086	59.867	3.5	0

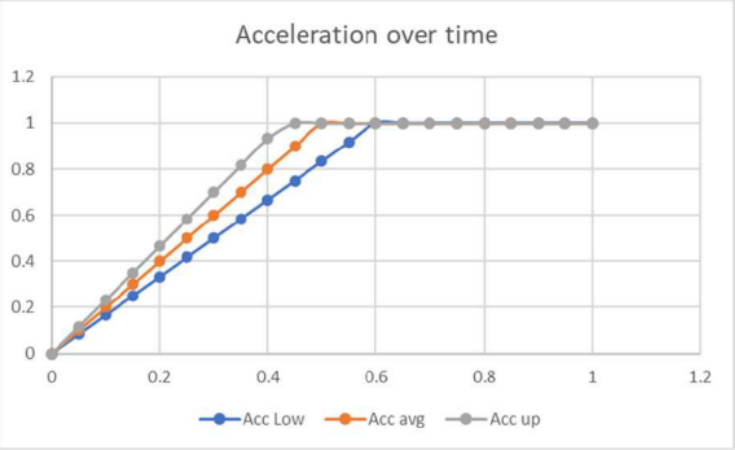
距離 (m)	時間 (s)	X位置 (m)	Y位置 (m)	曲率 (1/m)
0	0	0	0	0
1	0.072	1	0.004	0.008
2	0.144	2	0.015	0.008
3	0.216	3	0.035	0.008
4	0.288	3.999	0.062	0.008
5	0.36	4.999	0.096	0.008
6	0.432	5.998	0.138	0.008

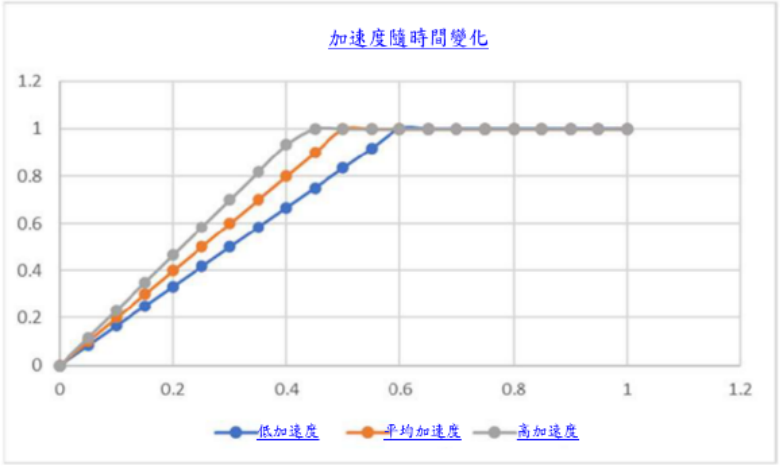
修正後					修正前
7	0.504	6.997	0.188	0.008	
8	0.576	7.995	0.246	0.008	
9	0.648	8.993	0.311	0.008	
10	0.72	9.99	0.384	0.008	
11	0.792	10.987	0.465	0.008	
12	0.864	11.983	0.553	0.008	
13	0.936	12.978	0.649	0.008	
14	1.008	13.973	0.753	0.008	
15	1.08	14.967	0.864	0.008	
16	1.152	15.96	0.983	0.006	
17	1.224	16.952	1.109	0.001	
18	1.296	17.944	1.235	0	
19	1.368	18.936	1.361	0	
20	1.44	19.928	1.487	0	
21	1.512	20.92	1.613	0	
22	1.584	21.912	1.739	0	
23	1.656	22.904	1.865	0	
24	1.728	23.896	1.991	0	
25	1.8	24.888	2.117	0	
26	1.872	25.88	2.243	0	
27	1.944	26.872	2.369	0	
28	2.016	27.864	2.495	-0.006	
29	2.088	28.857	2.615	-0.008	
30	2.16	29.85	2.728	-0.008	

修正後	修正前

31	2.232	30.845	2.833	-0.008
32	2.304	31.84	2.93	-0.008
33	2.376	32.836	3.02	-0.008
34	2.448	33.833	3.102	-0.008
35	2.52	34.83	3.176	-0.008
36	2.592	35.828	3.243	-0.008
37	2.664	36.826	3.302	-0.008
38	2.736	37.825	3.353	-0.008
39	2.808	38.824	3.397	-0.008
40	2.88	39.823	3.433	-0.008
41	2.952	40.823	3.461	-0.008
42	3.024	41.822	3.482	-0.008
43	3.096	42.822	3.495	-0.008
44	3.168	43.822	3.5	0

C.3



修正後	修正前
3.10.11.3 	

2.4安全輔助(SA)評等規章-2.4.3緊急煞車輔助系統(車對車)評等 **<<本案暫以2.4規章編號說明緊急煞車輔助系統(車對車)試驗評等條文修訂內容，後續擬修訂至2.2碰撞預防評等規章 >>**

2025 AEB 評等規章	2019 AEB 評等規章	修訂 TNCAP 條文草案(第三版)	對應 TNCAP 條文
3 ASSESSMENT OF AEB CAR-TO-CAR SYSTEMS	**5 ASSESSMENT OF AEB INTER-URBAN SYSTEMS**	2.4.3 緊急煞車輔助系統(車對車)評等	2.4.3 緊急煞車輔助系統(快速道路)評等
3.2 Definitions	**5.2 Definitions**	2.4.3.1 名詞釋義	2.4.3.1 名詞釋義
…	…		
Peak Braking Coefficient (PBC) – the measure of tyre to road surface friction based on the maximum deceleration of a rolling tyre, measured using the American Society for Testing and Materials (ASTM) E1136-10 (2010) standard reference test tyre, in accordance with ASTM Method E 1337-90 (reapproved 1996), at a speed of 64.4km/h, without water delivery. Alternatively, the method as specified in UNECE R13-H.		2.4.3.1.1 最高煞車係數（Peak Braking Coefficient, PBC）：根據滾動輪胎最大減速度計算出輪胎與路面摩擦力，本數值係使用美國材料和試驗協會（American Society for Testing and Materials, ASTM）F2493-20 標準試驗輪胎，且符合美國材料和試驗協會 E1337-19 試驗方法，以時速 64.4km/h 於乾燥路面上試驗，或依「車輛安全檢測基準」項次「四十三之二」6.2.5.1 所規範之方法。	
Autonomous Emergency Braking (AEB) – braking that is applied automatically by the vehicle in response to the detection of a likely	**Autonomous emergency braking (AEB) –** braking that is applied automatically by the vehicle in response to the detection of a likely	2.4.3.1.2 緊急煞車輔助系統（Autonomous emergency braking, AEB）：車輛偵測到可能發生碰撞情況下自動煞車，致使車輛減速並避免	2.4.3.1.1 緊急煞車輔助系統（Autonomous emergency braking, AEB）：車輛偵測到可能發生碰撞情況下自動煞車，致使車輛減速並避免

collision to reduce the vehicle speed and potentially avoid the collision.	collision to reduce the vehicle speed and potentially avoid the collision.	碰撞情事發生。	碰撞情事發生。
Forward Collision Warning (FCW) – an audio-visual warning that is provided automatically by the vehicle in response to the detection of a likely collision to alert the driver.	**Forward Collision Warning (FCW)** – an audiovisual warning that is provided automatically by the vehicle in response the detection of a likely collision to alert the driver.	2.4.3.1.3 前方碰撞預警系統（Forward Collision Warning, FCW）：車輛偵測到可能發生碰撞情況下，為了警示駕駛而自動發出之視聽覺警告信號。	2.4.3.1.2 前方碰撞預警系統（Forward Collision Warning, FCW）：車輛偵測到可能發生碰撞情況下，為了警示駕駛而自動發出之視聽覺警告信號。
Dynamic Brake Support (DBS) – a system that further amplifies the driver braking demand in response to the detection of a likely collision to achieve a greater deceleration than would otherwise be achieved for the braking demand in normal driving conditions.	**Dynamic Brake Support (DBS) –** a system that further amplifies the driver braking demand in response to the detection of a likely collision to achieve a greater deceleration than would otherwise be achieved for the braking demand in normal driving conditions.	2.4.3.1.4 動態煞車輔助系統（Dynamic Brake Support, DBS）：在車輛偵測到可能發生碰撞情況下，此系統能加強煞車效能，達到比平時行駛作動煞車時更大的減速度。	2.4.3.1.3 動態煞車輔助系統（Dynamic Brake Support, DBS）：在車輛偵測到可能發生碰撞情況下，此系統能加強煞車效能，達到比平時行駛作動煞車時更大的減速度。
Autonomous Emergency Steering (AES) – steering that is applied automatically by the vehicle in response to the detection of a likely collision to steer the vehicle around the vehicle in front to avoid the collision.		2.4.3.1.5 自動緊急轉向輔助系統 (Autonomous Emergency Steering, AES): 車輛偵測到可能發生碰撞情況下，系統自動介入轉向以使車輛繞過前方車輛並避免碰撞情事發生。	
Emergency Steering Support (ESS) – a system that supports the driver		2.4.3.1.6 緊急轉向輔助系統 (Emergency Steering Support, ESS):	

steering input in response to the detection of a likely collision to alter the vehicle path and potentially avoid a collision.		車輛偵測到可能發生碰撞情況下，系統介入輔助駕駛進行轉向，致使改變車輛行駛路徑並避免碰撞情事發生。	
	Car-to-Car Rear Stationary (CCRs) – a collision in which a vehicle travels forwards towards another stationary vehicle and the frontal structure of the vehicle strikes the rear structure of the other.	(第二版條文 2.4.3.1.4 已調整至第三版條文 2.4.3.2.1)	2.4.3.1.4 前車靜止情境試驗（Car-to-Car Rear Stationary, CCRs）：係指後方車輛往前行駛接近靜止的前方車輛，且行駛車輛之車頭碰撞靜止車輛之車尾。
	Car-to-Car Rear Moving (CCRm) – a collision in which a vehicle travels forwards towards another vehicle that is travelling at constant speed and the frontal structure of the vehicle strikes the rear structure of the other.	(第二版條文 2.4.3.1.5 已調整至第三版條文 2.4.3.2.2)	2.4.3.1.5 前車移動情境試驗（Car-to-Car Rear Moving, CCRm）：係指後方車輛往前行駛接近以恆定速度行駛之前方車輛，且行駛車輛之車頭碰撞以恆定速度行駛車輛之車尾。
	Car-to-Car Rear Braking (CCRb) – a collision in which a vehicle travels forwards towards another vehicle that is travelling at constant speed and then decelerates, and the frontal structure of the vehicle strikes the rear structure of the other.	(第二版條文 2.4.3.1.6 已調整至第三版條文 2.4.3.2.3)	2.4.3.1.6 前車煞車情境試驗（Car-to-Car Rear Braking, CCRb）：係指後方車輛往前行駛接近原以恆定速度行駛而後減速之前方車輛，且行駛車輛之車頭碰撞減速車輛之車尾。

Vehicle under test (VUT) – means the vehicle tested according to this protocol with a pre-crash collision mitigation or avoidance system on board		2.4.3.1.7 受驗車輛（Vehicle under test, VUT）：係指配備減緩碰撞或預防碰撞系統，並依據此規章進行試驗之車輛。	
Vehicle width – the widest point of the vehicle ignoring the rear-view mirrors, side marker lamps, tyre pressure indicators, direction indicator lamps, position lamps, flexible mud-guards and the deflected part of the tyre side-walls immediately above the point of contact with the ground.		2.4.3.1.8 車輛寬度（Vehicle width）：車輛最大寬度不包括後視鏡、側方標識燈、胎壓偵測裝置、方向燈、位置燈、軟式擋泥板及位於地面接觸點正上方之輪胎胎壁(Side-wall)最突出部分。	
Global Vehicle Target (GVT) – means the vehicle target used in this protocol as defined in ISO 19206-3:2021		2.4.3.1.9 全球目標車（Global Vehicle Target, GVT）：本試驗規章所規範之目標車。	
Time To Collision (TTC) – means the remaining time before the VUT strikes the GVT, assuming that the VUT and GVT would continue to travel with the speed it is travelling.		2.4.3.1.10 碰撞時間(Time To Collision, TTC)：若受驗車輛與全球目標車皆依其速度向前行進，受驗車輛會碰撞全球目標車之預估時間值。	

T_{AEB} – means the time where the AEB system activates. Activation time is determined by identifying the last data point where the filtered acceleration signal is below -1 m/s^2, and then going back to the point in time where the acceleration first crossed -0.3 m/s^2		2.4.3.1.11 緊急煞車輔助系統觸發時間（T_{AEB}）：觸發時間點的定義方式為找出最後一個濾波後加速度信號低於-1m/s^2的數據點，再往回找出加速度首次達到-0.3m/s^2的數據點，該點之時間即為觸發時間點。	
T_{FCW} – means the time where the audible warning of the FCW starts. The starting point is determined by audible recognition		2.4.3.1.12 前方碰撞預警系統觸發時間點（T_{FCW}）：前方碰撞預警系統之聲音警示觸發的時間，起始點以聲音辨識作判定。	
	Vrel_test – means the relative speed between the VUT and the EVT by subtracting the velocity of the EVT from that of the VUT at the start of test		2.4.3.1.7 試驗相對速度（Vrel_test）：受驗車輛與全球目標車之間的相對速度，計算方式為試驗開始時，將受驗車輛速度減去全球目標車速度。
V_{impact} – means the speed at which the VUT hits the GVT	**V_{impact}** – means the speed at which the VUT hits the EVT	2.4.3.1.13 碰撞速度（V_{impact}）：受驗車輛碰撞全球目標車(GVT)時的速度。	2.4.3.1.8 碰撞速度（V_{impact}）：受驗車輛碰撞全球目標車(GVT)時的速度。
Vrel_impact – means the relative speed at which the VUT hits the GVT by subtracting the velocity of the GVT from Vimpact at the time of collision	**Vrel_impact** – means the relative speed at which the VUT hits the EVT by subtracting the velocity of the EVT from Vimpact at the time of collision	2.4.3.1.14 碰撞相對速度（Vrel_impact）：受驗車輛碰撞全球目標車時的相對速度，計算方式為碰撞速度減去全球目標車遭碰撞時之	2.4.3.1.9 碰撞相對速度（Vrel_impact）：受驗車輛碰撞全球目標車時的相對速度，計算方式為碰撞速度減去全球目標車遭碰撞時之速度。

		速度。	
Driver Intention Monitoring system (DIM) – means a system that is effective at distinguishing intentional from unintentional lane crossing and suppressing undesired interventions and/or warnings.		2.4.3.1.15 駕駛意圖監測系統(Driver Intention Monitoring system, DIM): 係指系統能有效區分駕駛是否為刻意與非刻意之車道穿越，並抑制非預期之介入及/或警示。	
3.2.2 Test Scenarios		2.4.3.2 試驗情境	
Car-to-Car Rear Stationary (CCRs) – a collision in which a vehicle travels forwards towards another stationary vehicle and the frontal structure of the vehicle strikes the rear structure of the other.		2.4.3.2.1 前車靜止情境試驗（Car-to-Car Rear Stationary, CCRs）：係指後方車輛往前行駛接近靜止的前方車輛，且行駛車輛之車頭碰撞靜止車輛之車尾。	
Car-to-Car Rear Moving (CCRm) – a collision in which a vehicle travels forwards towards another vehicle that is travelling at constant speed and the frontal structure of the vehicle strikes the rear structure of the other.		2.4.3.2.2 前車移動情境試驗（Car-to-Car Rear Moving, CCRm）：係指後方車輛往前行駛接近以恆定速度行駛之前方車輛，且行駛車輛之車頭碰撞以恆定速度行駛車輛之車尾。	
Car-to-Car Rear Braking (CCRb) – a collision in which a vehicle travels forwards towards another vehicle that		2.4.3.2.3 前車煞車情境試驗（Car-to-Car Rear Braking, CCRb）：係指後方車輛往前行駛接近原以恆定速度行	

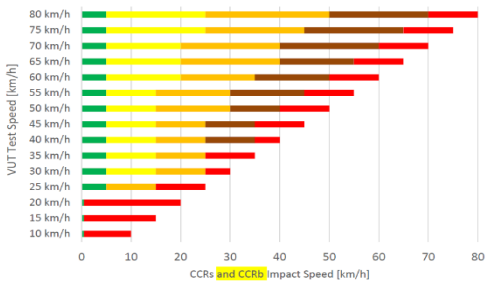
is travelling at constant speed and then decelerates, and the frontal structure of the vehicle strikes the rear structure of the other.		駛而後減速之前方車輛，且行駛車輛之車頭碰撞減速車輛之車尾。	
Car-to-Car Front Turn-Across-Path (CCFtap) – a collision in which a vehicle turns across the path of an oncoming vehicle travelling at constant speed, and the frontal structure of the vehicle strikes the front structure of the other.		2.4.3.2.4 轉彎穿越路徑情境試驗（Car-to-Car Front Turn-Across-Path, CCFtap）：係指當車輛轉彎穿越路徑，其與以恆定速度行駛之對向來車，雙方車輛之前方結構可能發生碰撞之情境。	
Car-to-Car Crossing Straight Crossing Path (CCCscp) – a collision in which a vehicle travels forwards along a straight path across a junction, towards a vehicle crossing the junction on a perpendicular path. The frontal structure of the vehicle under test strikes the side of the other vehicle.		2.4.3.2.5 直行交匯路徑情境試驗（Car-to-Car Crossing Straight Crossing Path, CCCscp）：係指當車輛直行穿越交匯處，其與行駛垂直路徑之車輛，受驗車輛之前方結構可能與其他車輛之側方結構發生碰撞之情境。	
Car-to-Car Front Head-On Straight (CCFhos) – a collision where a vehicle is travelling along a straight path within its defined lane and strikes another		2.4.3.2.6 前方對向來車直行情境試驗（Car-to-Car Front Head-On Straight, CCFhos）：係指當車輛直行該車道內，其與偏移車道至該車道內之對向	

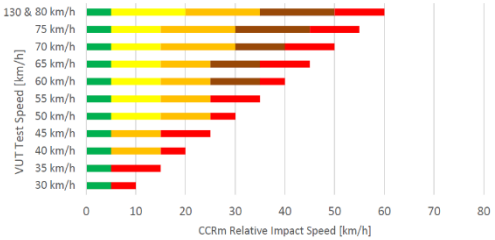
vehicle travelling in the opposite direction, which has drifted into the same lane as the original vehicle. The frontal structure of the vehicle strikes the frontal structure of the other. **Car-to-Car Front Head-On Lane change (CCFhol)** – a collision where a vehicle is travelling along a straight path within its defined lane and strikes another vehicle travelling in the opposite direction which has intentionally moved into the lane of the original vehicle to attempt an overtake. The frontal structure of the vehicle strikes the frontal structure of the other.		來車，雙方車輛之前方結構可能發生碰撞之情境。 2.4.3.2.7 前方對向來車變換車道情境試驗（Car-to-Car Front Head-On Lane change, CCFhol）：係指當車輛直行該車道內，其與行駛對向車道欲超車並駛入該車道內之對向來車，雙方車輛之前方結構可能發生碰撞之情境。	
3.3 Criteria and Scoring To be eligible for scoring points in AEB Car-to-Car, the AEB and/or FCW system must: - Not automatically switch off at a speed below 130km/h. - Needs to be default ON at the start of	**5.3 Criteria and Scoring** 5.3.1 To be eligible for scoring points in AEB Inter-Urban, the AEB and/or FCW system must operate up to speeds of at least 80 km/h, needs to be default ON at the start of every journey and and deactivation of the system should not be possible with a single push on a button.	2.4.3.3 標準與得分 2.4.3.3.1 緊急煞車輔助之車對車系統評等之得分，緊急煞車輔助系統及/或前方碰撞預警系統應符合下述規定： 2.4.3.3.1.1 車速小於 130 km/h 時，系統不得自動關閉。	2.4.3.2 標準與得分 2.4.3.2.1 緊急煞車輔助之快速道路系統評等之得分，緊急煞車輔助系統及/或前方碰撞預警系統適用車速應至少達到 80 km/h，每次啟動車輛時，預設狀態應為「開啟」，系統不得設計為僅按一鍵即關閉。

every journey and deactivation of the system should not be possible with a momentary single push on a button.		2.4.3.3.1.2 每次啟動車輛時，預設狀態應為「開啟」，系統不得設計為僅按短暫一鍵即關閉。	
- The audible component of the FCW system (if applicable) needs to be loud and clear.	5.3.1.1 The audible component of the FCW system (if applicable) needs to be loud and clear.	2.4.3.3.1.3 前方碰撞預警系統之聲音元件（若適用），其警示應大聲且清楚。	2.4.3.2.1.1 前方碰撞預警系統之聲音元件（若適用），其警示應大聲且清楚。
Additionally, for the AEB CCRm scenario points for this scenario are awarded only when the following precondition is met: - Evidence is provided by the OEM to demonstrate the system is capable of similar performance when tested in the CCRm scenario with a test speed of 130km/h and GVT speed of 70km/h, as with an 80km/h test speed with a 20km/h GVT speed (for all overlaps). Similar performance in considered within one colour band difference as per 4.3.2.		2.4.3.3.1.4 此外，應符合下列前提條件，緊急煞車輔助系統之前車移動情境試驗才能獲得分數： 車輛業者應提供佐證資料說明系統於前車移動情境試驗，試驗速度 110km/h、全球目標車速度 50km/h，與試驗速度 80km/h、全球目標車速度 20km/h 具有相似性能表現(適用所有重疊率)，相似性能表現定義為一個色帶差異內。	
Additionally, for the AEB CCRs scenario points for this scenario are		2.4.3.3.1.5 此外，對於緊急煞車輔助系統之前車靜止情境試驗，僅當符合以	

awarded only when the following preconditions are met: - Whiplash score for the front seat is at least rated as “Good”. - Full avoidance needs to be achieved for test speeds up to and including 20 km/h for all overlap situations, which is verified by one randomly selected test point.		下前提條件時才能獲得分數： 前座鞭甩分數至少為「優良」。 2.4.3.3.1.6 對於 CCRs 及 CCRm(僅適用 AEB 試驗)100%重疊情境下，試驗車速小於等於 40km/h 應達到避免碰撞；CCRs 其餘重疊情境下，試驗車速小於等於 20km/h 應達到避免碰撞，由隨機選擇之試驗點進行驗證。	
3.3.1 Assessment Criteria For CCRs (both AEB and FCW), CCRb, CCFhos, CCFhol and CCCscp tests the assessment criteria used is Vimpact. For CCRm tests the assessment criteria used is Vrel_impact. For CCFtap tests the assessment criteria is collision avoidance. Alternatively, for CCRs FCW system tests @ -50% overlap (50% for RHD vehicles) where performance does not result in full avoidance, the manufacturer has the option to	5.3.2 Assessment Criteria For both AEB and FCW system tests, the assessment criteria used is the relative impact speed Vrel_impact. For CCRb scenarios, the relative test speed is assumed equal to the initial test speed.	2.4.3.3.2 評等標準 對於 CCRs(AEB 與 FCW 系統)、CCRb、CCFhos、CCFhol 及 CCCscp 情境，使用的評等標準係採用碰撞速度。對於 CCRm 情境，使用的評等標準係採用碰撞相對速度。對於 CCFtap 情境，使用的評等標準係避免碰撞。 或者對於 CCRs FCW 系統試驗-50%重疊，若系統性能無法避免碰撞，車輛業者可選擇向 TNCAP 執行機構及檢測機構佐證緊急轉向輔助系統(駕駛啟動)透過轉向輔助功能避免碰撞，有關緊急轉向輔助系統試驗程序	2.4.3.2.2 評等標準 對於 AEB 與 FCW 系統試驗，使用的評等標準係採用碰撞相對速度。對於 CCRb 情境，假設相對試驗速度等於初始試驗速度。

demonstrate to Euro NCAP at the test laboratory that their (driver initiated) ESS system will function to avoid the collision by steering support. Euro NCAP has elaborated a test procedure for ESS, which provisions can be found in TB 037.		可參 Euro NCAP TB037。	
3.3.2 Car-to-Car Rear A maximum of 3.5 points is available for AEB/AES CCR. The scoring is based on normalized scores of the AEB and FCW/AES functions, assessed in the CCRs, CCRm and CCRb scenarios. For each test point the result is given a colour based on the following tables. For the purpose of these tables, CCRb tests are considered to be equivalent to a CCRs test with a 50km/h VUT test speed.	5.3.3 Scoring The scoring is based on normalized scores of the AEB and FCW functions, assessed in the CCRs, CCRm and CCRb scenarios. For the CCRs and CCRm scenarios, the total score for all five grid points per test speed is calculated as a percentage of the maximum achievable score per test speed, which is then multiplied by the points available for this test speed. It should be noted that the 100% overlap score is double counted. The points available and the colour distribution for the different test speeds for CCRs and CCRb (50 km/h only) are detailed in the graph below:	2.4.3.3.3 前車情境 對於前車情境之緊急煞車輔助系統/自動緊急轉向輔助系統(AES)試驗最高為 3.5 分，計分方式依緊急煞車輔助系統與前方碰撞預警系統/自動緊急轉向輔助系統功能在 CCRs、CCRm 及 CCRb 情境中評等之常態化分數。 根據下表指定每個試驗點之顏色。CCRb 試驗視為等同於受驗車輛速度 50km/h 之 CCRs 試驗。	2.4.3.2.3 得分 計分方式依緊急煞車輔助系統與前方碰撞預警系統功能在 CCRs、CCRm 及 CCRb 情境中評等之常態化分數。 對於 CCRs 與 CCRm 情境，每個試驗速度的所有五個網格點的總得分計算係以每個試驗速度的最大可得分的百分比，乘以該試驗速度之分數。另 100%重疊部分應雙重計算。 CCRs 與 CCRb（僅限 50 km/h）的不同試驗速度之可得分數與顏色分佈詳見下圖：

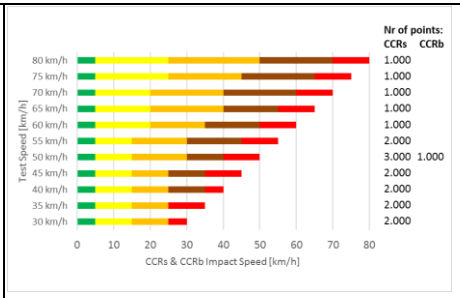




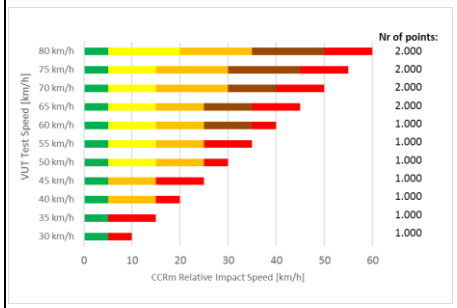
To aid understanding, the following table illustrates the speed range for each colour in a CCRs and CCRb test with a VUT test speed of 50km/h.

Colour	Impact speed range (km/h)
Green	$0 < v_{impact} < 5$
Yellow	$5 \leq v_{impact} < 15$
Orange	$15 \leq v_{impact} < 30$
Brown	$30 \leq v_{impact} < 40$
Red	$40 \leq v_{impact}$

For the CCRs and CCRm scenarios, the total score for all five grid points per



Similar for CCRm, where the relative impact speed is used:



(請參末頁圖示)

(請參末頁圖示)

下表說明 CCRs 與 CCRb 試驗中每種顏色之速度範圍(受驗車輛試驗速度為 50km/h)。

(請參末頁表格)

對於 CCRs 與 CCRm 情境，每個試驗速度的所有五個網格點的總得分計

(請參末頁圖示)

CCRm 採用碰撞相對速度：

(請參末頁圖示)

test speed is calculated as a percentage of the maximum achievable score per test speed, which is then multiplied by the points available for this test speed. It should be noted that the 100% overlap score is double counted.

$$\frac{score\ at\ [-50\%] + score\ at\ [-75\%] + (score\ at\ [100\%] \times 2) + score\ at\ [75\%] + score\ at\ [50\%]}{6}$$

…

The points available for the different CCR grid points and/or scenarios are shown in the table below:

Test Speed (km/h)	AEB			FCW
	CCRs	CCRm	CCRb	CCRs
10	1.000			
15	2.000			
20	2.000			
25	2.000			
30	2.000	1.000		
35	2.000	1.000		
40	1.000	1.000		
45	1.000	1.000		
50	1.000	1.000	4 x 1.000	
55		1.000		1.000
60		1.000		1.000
65		2.000		1.000
70		2.000		1.000
75		2.000		1.000
80		2.000		1.000
Total	**14.000**	**15.000**	**4.000**	**6.000**
Scenario Points	**1.000**	**1.000**	**1.000**	**0.500**

3.3.2.1 Correction factors

The data provided by the manufacturer

…

5.3.4 AEB Inter-Urban Correction factors

…

算係以每個試驗速度的最大可得分的百分比，乘以該試驗速度之分數。另 100%重疊部分應雙重計算。

$$\frac{[-50\%]分數+[-75\%]分數+[100\%]分數\ x2+[75\%分}{6}$$

…

前車情境各試驗之分數如下表：

(請參末頁表格)

2.4.3.3.4 修正係數

車輛業者所提供用於 CCRs 與 CCRm

…

2.4.3.2.4 緊急煞車輔助之快速道路系統之修正係數

for CCRs and CCRm is scaled using two correction factors, one for AEB and one for FCW/AES, which are calculated based on a number of verification tests performed. The vehicle sponsor will fund 15 verification tests, 10 for AEB and 5 for FCW/AES where applicable. The vehicle manufacturer has the option of sponsoring up to 10 additional verification tests for AEB and 5 for FCW/AES. …	The data provided by the manufacturer is scaled using two correction factors, one for AEB and one for FCW, which are calculated based on a number of verification tests performed. The vehicle sponsor will fund 20 verification tests, 10 for AEB and 10 for FCW where applicable. The vehicle manufacturer has the option of sponsoring up to 10 additional verification tests for AEB and 10 for FCW. …	試驗的數據應使用兩個修正係數進行權衡，一個用於 AEB，另一個用於 FCW/AES，這些修正係數是基於執行多個驗證試驗結果計算而得。檢測機構應執行 15 個驗證試驗，10 個適用於 AEB，另 5 個適用於 FCW/AES（若適用）。 車輛業者可選擇額外資助 AEB 至多 10 個驗證試驗與 FCW/AES 至多 5 個驗證試驗。 …	車輛業者所提供的數據應使用兩個修正係數進行權衡，一個用於 AEB，另一個用於 FCW，這些修正係數是基於執行多個驗證試驗結果計算而得。檢測機構應執行 20 個驗證試驗，10 個適用於 AEB，另 10 個適用於 FCW（若適用）。 車輛業者可選擇額外資助 AEB 及 FCW 各別至多 10 個驗證試驗。 …
The correction factor is used to calculate the CCRs and CCRm scores for the AEB and FCW/AES function scores. The final CCRs and CCRm scores for AEB and FCW/AES can never exceed 100% (3.0 and 0.5 points respectively) regardless of the correction factor. 3.3.2.2 Impact speed tolerance …	The correction factor is used to calculate the AEB and FCW function scores. The final AEB and FCW scores for the vehicle can never exceed 100% (1.5 and 1.0 points respectively) regardless of the correction factor. 5.3.5 Impact speed tolerance …	修正係數用於計算 CCRs 與 CCRm 試驗之 AEB 與 FCW/AES 功能分數。無論修正係數為何，車輛最終 CCRs 與 CCRm 試驗之 AEB 及 FCW/AES 得分都不應超過 100%（分別為 3.0 與 0.5 分）。 2.4.3.3.5 碰撞速度的容許誤差 …	修正係數用於計算 AEB 與 FCW 功能分數。無論修正係數為何，車輛最終 AEB 及 FCW 得分都不應超過 100%（分別為 1.5 與 1.0 分）。 2.4.3.2.5 碰撞速度的容許誤差 …

The tolerance only applies to verify whether the predicted colour of the tested verification point is correct. When, including tolerance, the colour is not in line with the prediction, the true colour of the test point will be determined by comparing the actual measured impact speed with the colour band in section 3.3.2 without applying a tolerance to the impact speed. As an example, the accepted impact speed ranges for the 50km/h CCRs and CCRb tests are as follows: … 3.3.3 Car-to-Car Front turn across path A maximum of 1 point is available for AEB CCFtap. A normalised score is calculated based on the number of scenarios (out of 9) where the vehicle itself avoided the collision. This normalised score is multiplied with the available points for CCFtap.	The tolerance only applies to verify whether the predicted colour of the tested verification point is correct. When, including tolerance, the colour is not in line with the prediction, the true colour of the test point will be determined by comparing the actual measured impact speed with the colour band in section 5.3.3 without applying a tolerance to the impact speed. As an example the accepted impact speed ranges for the 50km/h CCRs and CCRb tests are as follows: …	容許誤差僅適用於驗證試驗點之預測顏色是否正確。當包括容許誤差在內，顏色與預測不一致時，試驗點的真實顏色將通過實際測量的碰撞速度並比照 2.4.3.3.3 節中的色帶來確定顏色，而不對碰撞速度施加容許誤差。 例如 CCRs 與 CCRb 碰撞速度為 50km/h 可接受的碰撞速度範圍如下： … 2.4.3.3.6 轉彎穿越路徑情境試驗 轉彎穿越路徑情境試驗之 AEB 系統試驗最多可獲得 1 分。常態化分數係根據車輛本身避免碰撞之情境數量(共 9 種)計算得出，常態化分數乘以轉彎穿越路徑情境試驗分數。	容許誤差僅適用於驗證試驗點之預測顏色是否正確。當包括容許誤差在內，顏色與預測不一致時，試驗點的真實顏色將通過實際測量的碰撞速度並比照 2.4.3.2.3 節中的色帶來確定顏色，而不對碰撞速度施加容許誤差。 例如 CCRs 與 CCRb 碰撞速度為 50km/h 可接受的碰撞速度範圍如下： …

Test Speed	CCFtap		
	GVT @ 30km/h	GVT @ 45km/h	GVT @ 60km/h
10 km/h	1.000	1.000	1.000
15 km/h	1.000	1.000	1.000
20 km/h	1.000	1.000	1.000
Total	9.000		
Scenario Points	1.000		

3.3.4 Car-to-car crossing straight crossing path

A maximum of 2 points is available for AEB CCCscp. A normalised score is calculated based on the results of the 30 test speed combinations.

Test Speed	CCCscp AEB				
	GVT Speed				
	20km/h	30km/h	40km/h	50km/h	60km/h
Start from stop	0.500	0.500	0.500	0.500	0.500
20 km/h	1.000	0.250	0.250	0.250	0.250
30 km/h	1.000	1.000	0.250	0.250	0.250
40 km/h	1.000	1.000	1.000	0.250	0.250
50 km/h	1.000	1.000	1.000	1.000	0.250
60 km/h	1.000	1.000	1.000	1.000	1.000
Total	20.000				
Scenario Points	2.000				

A maximum of 1 point is available for FCW CCCscp. A normalised score is calculated based on the results of the 15 test speed combinations.

Where the AEB system avoided the collision, the points are automatically awarded for the corresponding FCW test.

Test Speed	CCCscp FCW				
	GVT Speed				
	20km/h	30km/h	40km/h	50km/h	60km/h
40 km/h	1.000	1.000	1.000	0.250	0.250
50 km/h	1.000	1.000	1.000	1.000	0.250
60 km/h	1.000	1.000	1.000	1.000	1.000
Total	12.75				
Scenario Points	1.000				

The criteria for scoring points for both AEB and FCW are:

(請參末頁表格)

2.4.3.3.7 直行交匯路徑情境試驗

直行交匯路徑情境試驗之 AEB 系統試驗最多可獲得 2 分。常態化分數係根據 30 個試驗速度組合之結果計算得出。

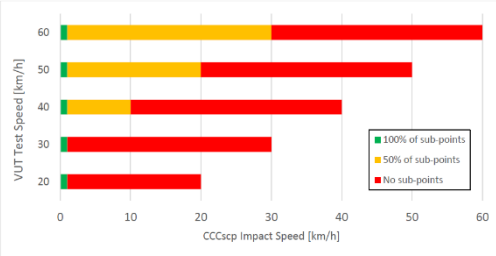
(請參末頁表格)

直行交匯路徑情境試驗之 FCW 系統試驗最多可獲得 1 分。常態化分數係根據 15 個試驗速度組合之結果計算得出。若 AEB 系統避免碰撞，則相應之 FCW 試驗將自動獲得分數。

(請參末頁表格)

AEB 與 FCW 評分標準為：

(1) 當受驗車輛試驗速度小於等於

- Where the VUT test speed is ≤30km/h (including start from stop) points are scored a pass/fail criteria based on collision avoidance. - Where the VUT test speed is ≥40km/h: •Full points are awarded per test where the vehicle's AEB/FCW system activates, and the collision is avoided. •Half points are awarded per test where the vehicle's AEB/FCW system activates, mitigating the collision speed by ≥30km/h. - Where a test speed combination is avoided by AEB, the points are automatically awarded for the corresponding FCW test.  		30km/h(包含從靜止啟動)時，根據避免碰撞作為通過/未通過之評分標準。 (2) 當受驗車輛試驗速度大於等於40km/h 時： (A) 若 AEB 系統作動且避免碰撞，則每次試驗可獲得滿分。 (B) 若 AEB/FCW 系統作動且減速大於等於 30km/h，則每次試驗可獲得一半分數。 (3) 若 AEB 系統避免碰撞，則相應之 FCW 試驗將自動獲得分數。 (請參末頁圖示)	

3.3.5 Car-to-car front head on

A maximum of 1 point is available for AEB CCFhos/CCFhol.

The OEM must demonstrate, by means of a dossier, that in the following test scenarios the vehicle's AEB system will activate, mitigating the impact speed of the collision. The OEM must demonstrate that the system achieves the minimum mitigation required to score points across the specified speed range for each test scenario.

For each test scenario:

- 0.25 points are awarded if a speed reduction ≥20km/h is achieved.
- 0.125 points are awarded where 10km/h ≤ speed reduction < 20km/h is achieved.

Car-to-Car Head On			
Scenario	Test Speed		Points
	VUT	Test Target	(speed reduction ≥20km/h)
CCFhos	50 km/h	50 km/h	0.250
	70 km/h	70 km/h	0.250
CCFhol	50 km/h	50 km/h	0.250
	70 km/h	70 km/h	0.250
Total			1.000
Scenario Points			1.000

2.4.3.3.8 前方對向來車情境試驗

前方對向來車直行/前方對向來車變換車道情境試驗之 AEB 系統試驗最多可獲得 1 分。

車輛業者應提供佐證文件，說明進行以下情境試驗時 AEB 系統將作動且可減輕碰撞，且應說明系統於每個情境試驗之速度範圍內可得分。

對於每個情境試驗：

(1) 若減速大於等於 20km/h 則可獲得 0.25 分。

(2) 若減速大於等於 10km/h 且小於 20km/h 則可獲得 0.125 分。

(請參末頁表格)

3.3.6 Human Machine Interface (HMI) A maximum of 0.5 points are available for HMI. A normalised HMI score is calculated based on the two criteria below. Points can be achieved for the following: - Supplementary warning for the FCW system: 1 point In addition to the required audio-visual warning, a more sophisticated warning like head-up display, belt jerk, or any other haptic feedback (with an exception to brake jerk, see below note) is awarded when it is issued at a TTC > 1.2s (applying to FCW CCRs 55~80km/h including all overlaps). Alternatively, it will be awarded if all CCR scenarios are avoided up to 80 kph by AEB only. **NOTE:** The supplementary warning point is not applicable to AEB only systems **NOTE:** Additional requirements for using braking as a supplementary warning in CCR scenarios > 40kph	5.3.6 Human Machine Interface (HMI) HMI points can be achieved for the following: • Supplementary warning for the FCW system 1 point In addition to the required audiovisual warning, a more sophisticated warning like head-up display, belt jerk, brake jerk or any other haptic feedback is awarded when it is issued at a TTC > 1.2s. This is only valid for cases where the AEB system is not able to fully avoid the impact at full overlap. **NOTE**: The supplementary warning point is not applicable to AEB only systems • Reversible pre-tensioning of the belt in the pre-crash phase 1 point	2.4.3.3.9 人機介面 人機介面最多可獲得 0.5 分。常態化分數係根據以下 2 個規範計算得出， 人機介面得分規範如下： (1) 前方碰撞預警系統之輔助警示 1 分 除規定的視聽覺警示，還可以在 TTC> 1.2s 時發出更複雜的警告(適用於 FCW CCRs 55-80km/h，包含所有重疊)，如抬頭顯示器、安全帶震動或任何其他觸覺反饋(除煞車震動外，參見以下附註)，即可獲得分數。或是若僅透過 AEB 系統於所有前車情境至多 80km/h 皆能避免碰撞，亦可獲得分數。 附註：輔助警示額外得分不適用於僅有緊急煞車輔助之系統。 附註：於相對速度大於 40km/h 之前車情境試驗中，使用煞車作為輔助警示之額外要求： (A)於 AEB 系統介入至少 0.5 秒	2.4.3.2.6 人機介面 人機介面得分規範如下： (1) 前方碰撞預警系統之輔助警示 1 分 除規定的視聽覺警示，還可以在 TTC> 1.2s 時發出更複雜的警告，如抬頭顯示器、安全帶震動、煞車震動或任何其他觸覺反饋，即可獲得分數。此僅適用於 AEB 系統在完全重疊時無法完全避免碰撞的情況。 附註：輔助警示額外得分不適用於僅有緊急煞車輔助之系統。

relative speed: •A brake jerk is accepted when issued ≥0.5s before main AEB intervention, with a jerk of ≥ 10m/s3, reaching a deceleration more than 0.5m/s² (or lasting a minimum duration of 50 ms) OR •A partial deceleration step is accepted when a constant acceleration ≤ -2m/s ² is seen for a duration of ≥0.5s before main AEB intervention. - Reversible pre-tensioning of the belt in the pre-crash phase or ESS: 1 point		前發出煞車震動，加速度變化率大於等於 10m/s³，減速度超過 0.5m/s²(或持續至少 50ms)或 (B) 於 AEB 系統介入前，當加速度持續小於等於-2m/s² 且持續時間大於等於 0.5s 時，部分減速步驟可被接受。 (2) 碰撞前之安全帶預負載裝置或緊急轉向輔助系統 1 分。	(2) 碰撞前之安全帶預負載裝置 1 分
When the system detects a critical situation that can possibly lead to a crash, the belt can already be pre-tensioned to prepare for the oncoming impact. As an alternative way to score 1 point, the vehicle shall be equipped with ESS, for which the system requirements and the testing procedure can be found in the Technical Bulletin TB037.	When the system detects a critical situation that can possibly lead to a crash, the belt can already be pre-tensioned to prepare for the oncoming impact. The HMI score is calculated by dividing the points achieved by 2.	系統若偵測到可能造成碰撞之緊急狀況，安全帶可預先縮緊，以因應即將發生之碰撞。 獲得 1 分之替代方案為車輛應配備緊急轉向輔助系統，其系統規定與試驗程序參 Euro NCAP TB037。	系統若偵測到可能造成碰撞之緊急狀況，安全帶可預先縮緊，以因應即將發生之碰撞。 將人機介面總分除以 2。

3.3.7 Total AEB Car-to-Car Score

The total score in points is the weighted sum of the CCR scores, the CCFtap score, the CCCscp scores, the CCFho scores and HMI. Where the scores are expressed as percentages:

(CCRs AEB score x CCR AEB Correction factor x 1.0)
+(CCRm AEB score x CCR AEB Correction factor x 1.0)
+(CCRb AEB score x 1.0)
+(CCRs FCW score x CCRs FCW Correction factor x 0.5)
+(CCFtap score x 1.0)
+(CCCscp AEB score x 2.0)
+(CCCscp FCW score x 1.0)
+(CCFhos/hol score x 1.0)
+(HMI score x 0.5)

= AEB CartoCar total score

3.3.7.1 Scoring Example

AEB Car-to-car	Points	Correction Factor	Percentage	Score
CCR AEB				
CCRs	12	1.02	87.4	**0.874 /1.000**
CCRm	15	1.02	100	**1.000 /1.000**
CCRb	4		100	**1.000 /1.000**
CCR FCW				
CCRs	6	0.95	95%	**0.475 /0.500**
CCFtap	6		66.7	**0.667 /1.000**
CCCscp				
AEB	12.5		62.5	**1.250 /2.000**
FCW	12.75		100	**1.000 /1.000**
CCFhol / hos	0.5		50	**0.500 /1.000**
HMI	2		100	**0.500 /0.500**
Total	**7.266 /9.000**			

5.3.7 Total AEB Inter-Urban Score

The total score in points is the weighted sum of the AEB score, FCW score and HMI score as shown below.

(AEB score x AEB Correction factor x 1.5)
+(FCW score x FCW Correction factor x 1.0)
+(HMI score x 0.5)
AEB Inter Urban total score

5.3.7.1 Scoring Example

Manufacturer X has provided the following prediction to Euro NCAP, where the predicted score is 2.669 points:

2.4.3.3.10 AEB 車對車總得分

總分是 CCR 得分、CCFtap 得分、CCCscp 得分、CCFho 得分及 HMI 得分的加權總和，分數以百分比表示，如下所示。

(CCRs AEB 得分 x CCR AEB 修正係數 x 1.0)+(CCRm AEB 得分 x CCR AEB 修正係數 x 1.0)+(CCRb AEB 得分 x 1.0)+(CCRs FCW 得分 x CCRs FCW 修正係數 x 0.5)+(CCFtap 得分 x 1.0)+(CCCscp AEB 得分 x 2.0)+(CCCscp FCW 得分 x 1.0)+(CCFhos/hol 得分 x 1.0)+(人機介面得分 x 0.5) = AEB 車對車總得分

2.4.3.3.10.1 得分範例

(請參末頁表格)

2.4.3.2.7 AEB Inter-Urban 總得分

總分是 AEB 得分、FCW 得分及 HMI 得分的加權總和，如下所示。

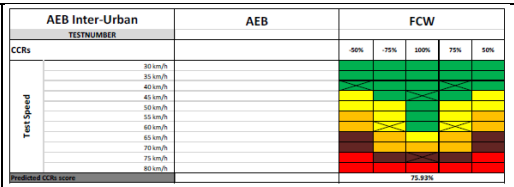
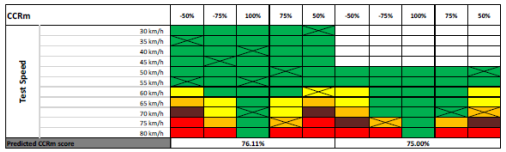
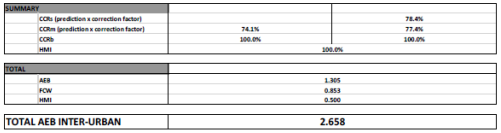
(緊急煞車輔助系統得分 x 緊急煞車輔助系統修正係數 x 1.5)+(前方碰撞預警系統得分 x 前方碰撞預警系統修正係數 x 1.0)+(人機介面得分 x 0.5) = 緊急煞車輔助之快速道路系統總得分

2.4.3.2.7.1 得分範例

車輛業者 X 向 TNCAP 執行機構提供以下預測，其中預測得分為 2.669 分：

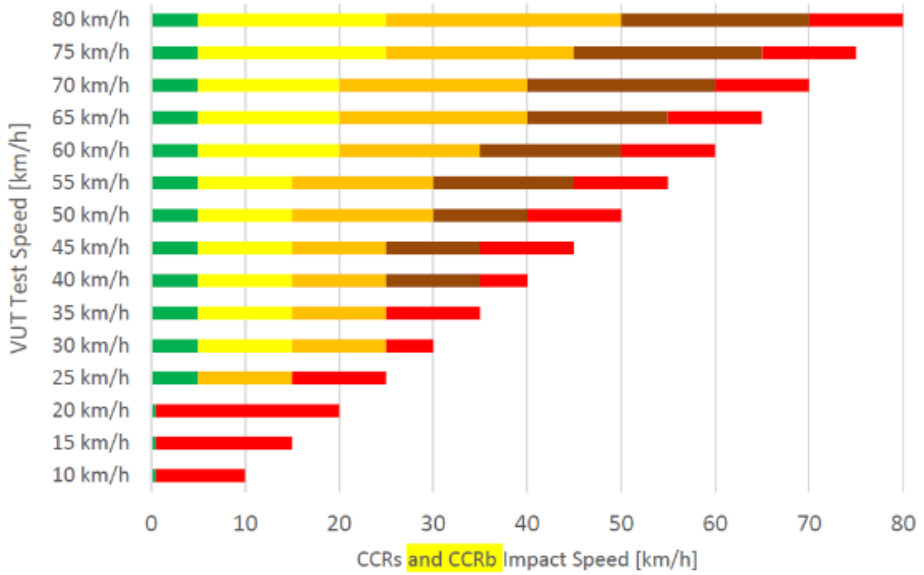
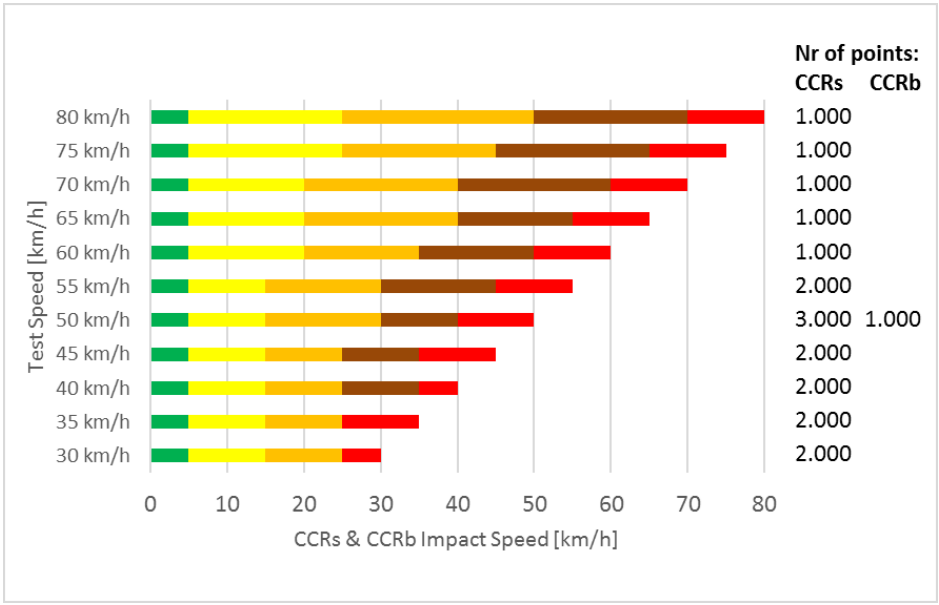
(請參末頁表格)

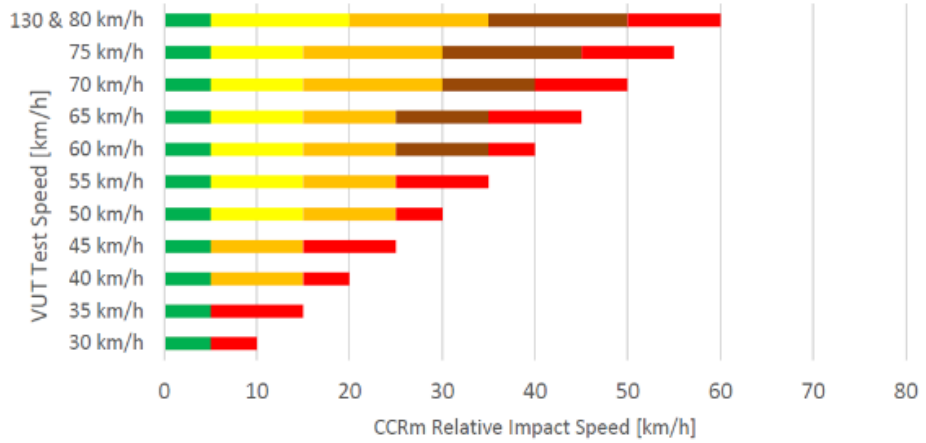
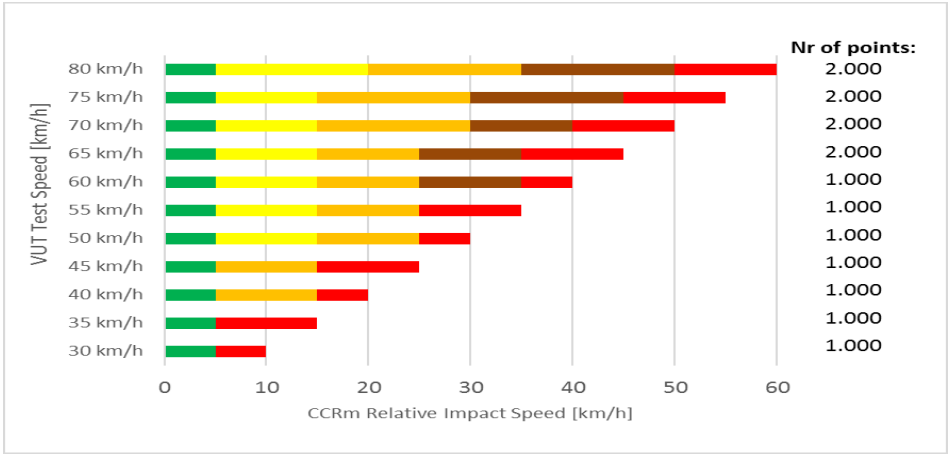
隨機選擇的驗證點與試驗結果如下：

	  The randomly chosen verification points and test results provide the following scores: Using the following AEB Inter-Urban scenario and HMI scores: 	(請參末頁表格) 使用以下 AEB Inter-Urban 情境與 HMI 得分： (請參末頁表格)
3.4 Visualisation The AEB Car-to-Car scores are presented separately using a coloured top view of the scenario for the different overlap situations (where applicable); left overlap, full overlap and right overlap. The colours used are based on the overlap scores	**5.4 Visualisation** The AEB Inter-Urban scores are presented separately using a coloured top view of the scenario for the different overlap situations (where applicable); left overlap, full overlap and right overlap. The colours used are based on the overlap scores	2.4.3.4 視覺呈現 AEB 車對車得分個別使用不同重疊情況之彩色頂視圖呈現(如適用); 左重疊、完全重疊及右重疊。使用的顏色分別基於各別重疊分數，四捨五入到小數點後三位。 (請參末頁表格)	2.4.3.3 視覺呈現 AEB Inter-Urban 得分個別使用不同重疊情況之彩色頂視圖呈現(如適用); 左重疊、完全重疊及右重疊。使用的顏色分別基於各別重疊分數，四捨五入到小數點後三位。 (請參末頁表格)

	Predicted score	Actual tested score	Correction Factor
AEB	9.250	9.000	0.973
FCW	7.750	8.000	1.032

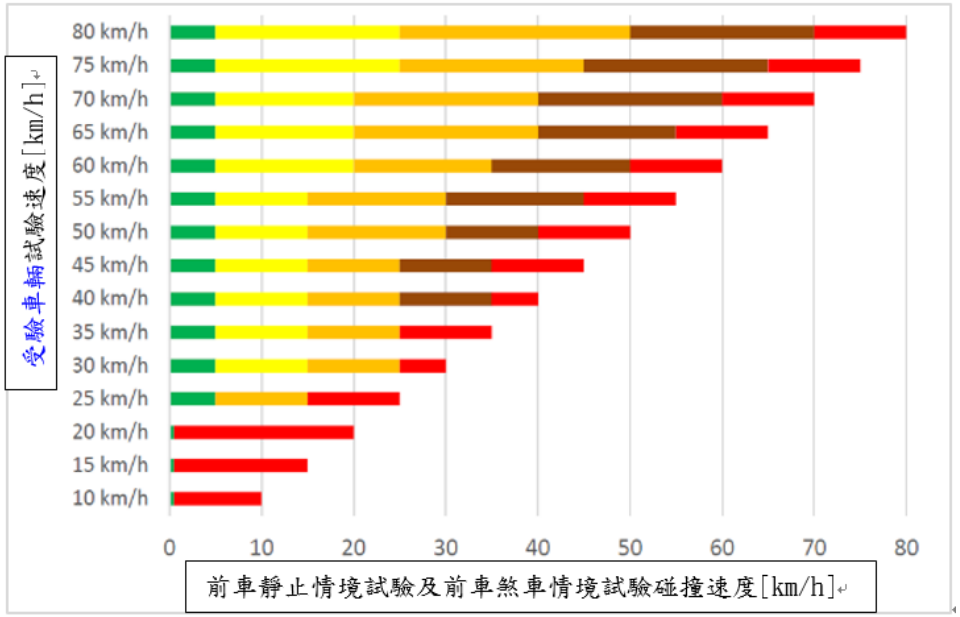
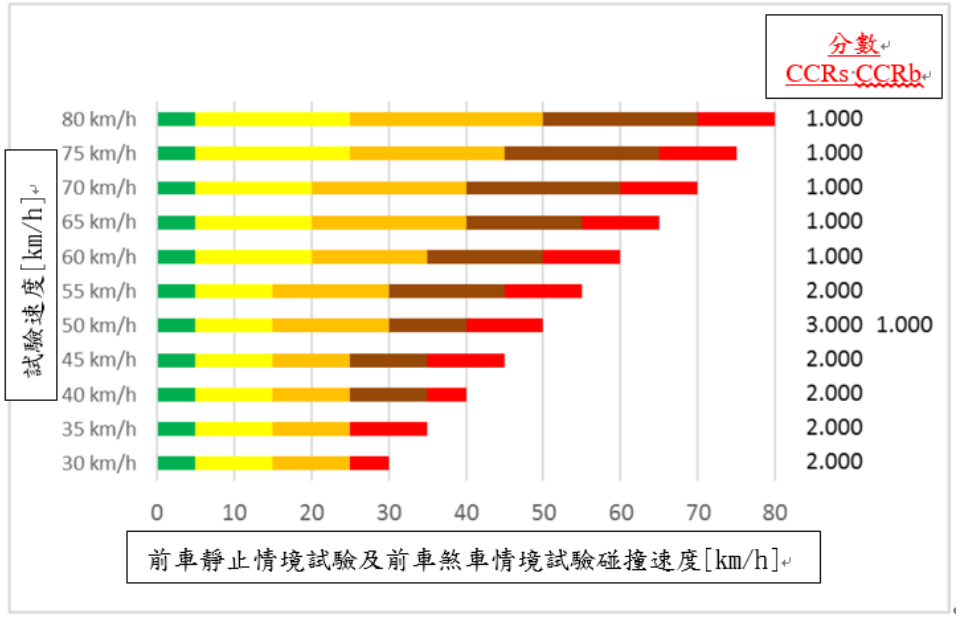
respectively, rounded to three decimal places. **Colour** **Verdict** **Applied to Total Score** **For sub Scores** Green 'Good' 6.751 – 9.000 points 75.0% - 100.0% Yellow 'Adequate' 4.501 – 6.750 points 50.0% - 75.0% Orange 'Marginal' 2.251 – 4.500 points 25.0% - 50.0% Brown 'Weak' 0.001 – 2.250 points 00.0% - 25.0% Red 'Poor' 0.000 points 00.0%	respectively, rounded to three decimal places. **Colour** **Verdict** **Applied to Total Score** **For sub Scores** Green 'Good' 2.251 - 3.000 points 75.0% - 100.0% Yellow 'Adequate' 1.501 - 2.250 points 50.0% - 75.0% Orange 'Marginal' 0.751 - 1.500 points 25.0% - 50.0% Brown 'Weak' 0.001 - 0.750 points 00.0% - 25.0% Red 'Poor' 0.000 points 00.0		

修正後	修正前
3.3.2 	5.3.3 

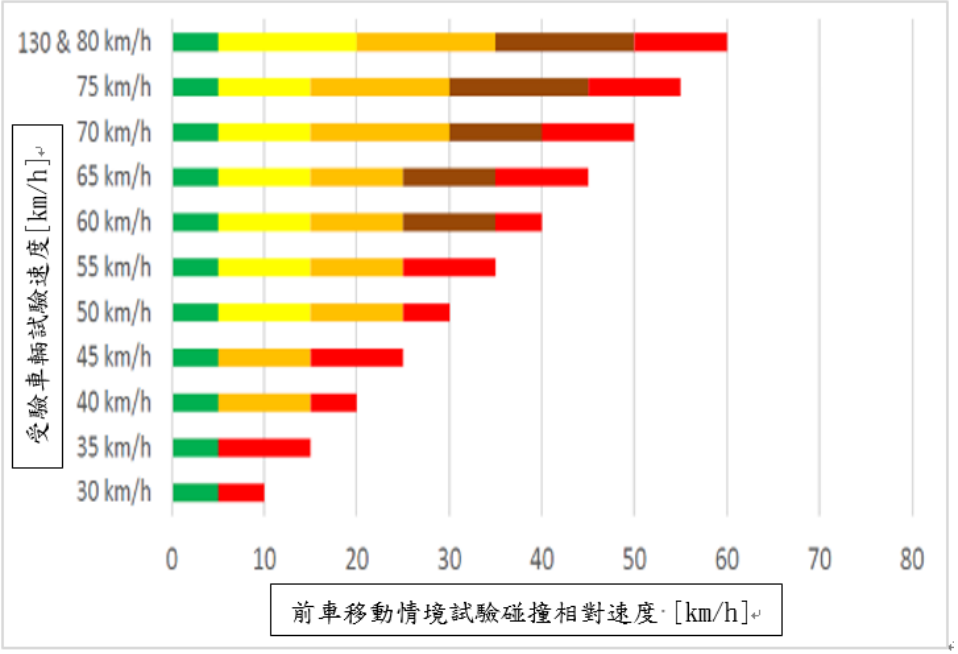
修正後	修正前
	

Colour	Impact speed range (km/h)
Green	$0 < V_{impact} < 5$
Yellow	$5 \leq V_{impact} < 15$
Orange	$15 \leq V_{impact} < 30$
Brown	$30 \leq V_{impact} < 40$
Red	$40 \leq V_{impact}$

修正後	修正前
<table><tr><th rowspan="2">Test Speed (km/h)</th><th colspan="3">AEB</th><th>FCW</th></tr><tr><th>CCRs</th><th>CCRm</th><th>CCRb</th><th>CCRs</th></tr><tr><td>10</td><td>1.000</td><td></td><td></td><td></td></tr><tr><td>15</td><td>2.000</td><td></td><td></td><td></td></tr><tr><td>20</td><td>2.000</td><td></td><td></td><td></td></tr><tr><td>25</td><td>2.000</td><td></td><td></td><td></td></tr><tr><td>30</td><td>2.000</td><td>1.000</td><td></td><td></td></tr><tr><td>35</td><td>2.000</td><td>1.000</td><td></td><td></td></tr><tr><td>40</td><td>1.000</td><td>1.000</td><td></td><td></td></tr><tr><td>45</td><td>1.000</td><td>1.000</td><td></td><td></td></tr><tr><td>50</td><td>1.000</td><td>1.000</td><td>4 x 1.000</td><td></td></tr><tr><td>55</td><td></td><td>1.000</td><td></td><td>1.000</td></tr><tr><td>60</td><td></td><td>1.000</td><td></td><td>1.000</td></tr><tr><td>65</td><td></td><td>2.000</td><td></td><td>1.000</td></tr><tr><td>70</td><td></td><td>2.000</td><td></td><td>1.000</td></tr><tr><td>75</td><td></td><td>2.000</td><td></td><td>1.000</td></tr><tr><td>80</td><td></td><td>2.000</td><td></td><td>1.000</td></tr><tr><td>Total</td><td>14.000</td><td>15.000</td><td>4.000</td><td>6.000</td></tr><tr><td>Scenario Points</td><td>1.000</td><td>1.000</td><td>1.000</td><td>0.500</td></tr></table> 2.4.3.3.3	2.4.3.2.3

修正後	修正前
 受驗車輛試驗速度[km/h] 80 km/h 75 km/h 70 km/h 65 km/h 60 km/h 55 km/h 50 km/h 45 km/h 40 km/h 35 km/h 30 km/h 25 km/h 20 km/h 15 km/h 10 km/h 0 10 20 30 40 50 60 70 80 前車靜止情境試驗及前車煞車情境試驗碰撞速度[km/h]	 分數 CCRs CCRb 試驗速度[km/h] 80 km/h 1.000 75 km/h 1.000 70 km/h 1.000 65 km/h 1.000 60 km/h 1.000 55 km/h 2.000 50 km/h 3.000 1.000 45 km/h 2.000 40 km/h 2.000 35 km/h 2.000 30 km/h 2.000 0 10 20 30 40 50 60 70 80 前車靜止情境試驗及前車煞車情境試驗碰撞速度[km/h]

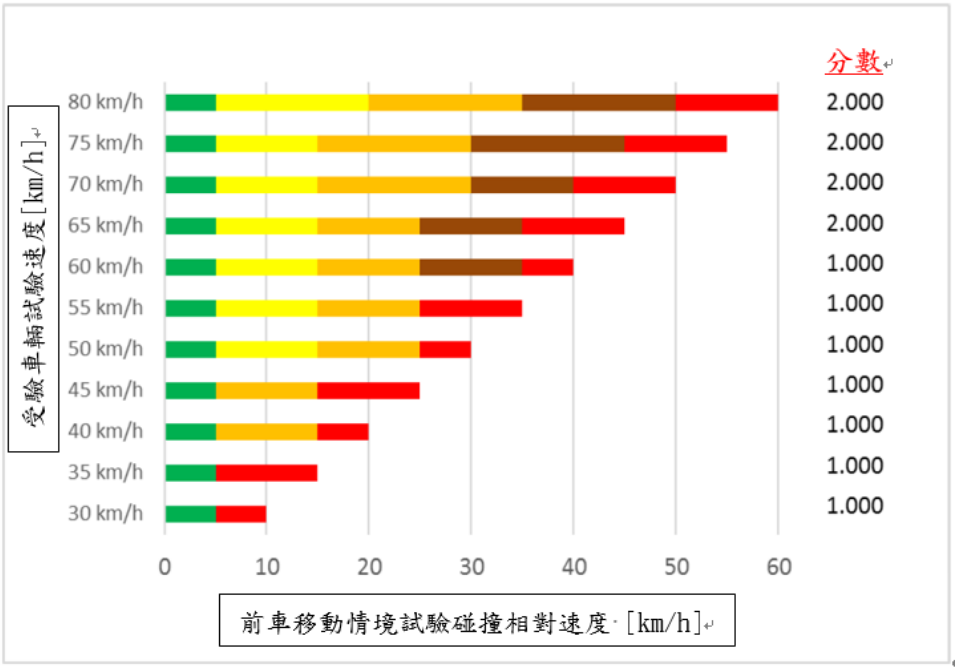
修正後



顏色	碰撞速度範圍 (km/h)
綠色	0 < 碰撞速度 < 5
黃色	5 ≤ 碰撞速度 < 15
橘色	15 ≤ 碰撞速度 < 30
棕色	30 ≤ 碰撞速度 < 40
紅色	40 ≤ 碰撞速度

試驗速度 (km/h)	緊急煞車輔助系統			前方碰撞預警系統
	前車靜止情境試驗	前車移動情境試驗	前車煞車情境試驗	前車靜止情境試驗

修正前



修正後					修正前
10km/h	1.000				
15km/h	2.000				
20km/h	2.000				
25km/h	2.000				
30km/h	2.000	1.000			
35km/h	2.000	1.000			
40km/h	1.000	1.000			
45km/h	1.000	1.000			
50km/h	1.000	1.000	4x1.000		
55km/h		1.000		1.000	
60km/h		1.000		1.000	
65km/h		2.000		1.000	
70km/h		2.000		1.000	
75km/h		2.000		1.000	
80km/h		2.000		1.000	
總分	**14.000**	**15.000**	**4.000**	**6.000**	
情境分數	**1.000**	**1.000**	**1.000**	**0.500**	

3.3.3

Test Speed	CCFtap		
	GVT @ 30km/h	GVT @ 45km/h	GVT @ 60km/h
10 km/h	1.000	1.000	1.000
15 km/h	1.000	1.000	1.000
20 km/h	1.000	1.000	1.000
Total	**9.000**		
Scenario Points	**1.000**		

修正後	修正前

2.4.3.3.6

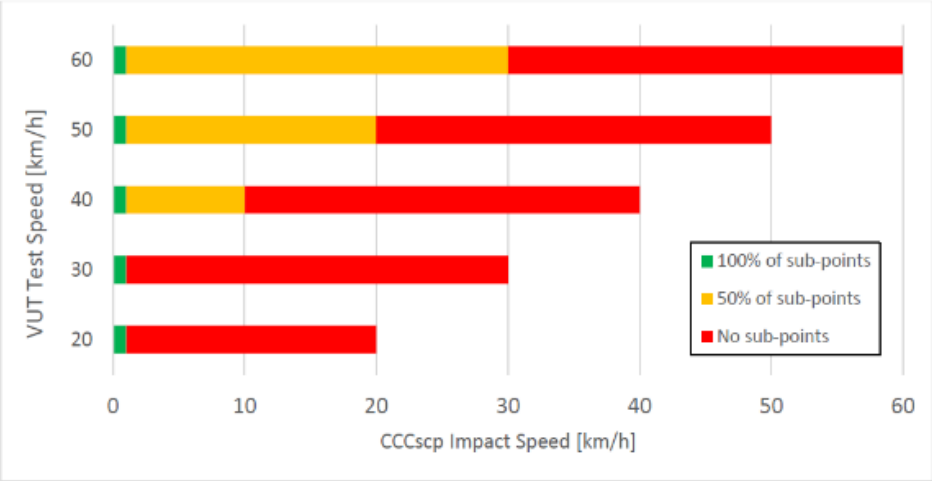
試驗速度	轉彎穿越路徑情境試驗		
	全球目標車@30 km/h	全球目標車@45km/h	全球目標車@60 km/h
10km/h	1.000	1.000	1.000
15km/h	1.000	1.000	1.000
20km/h	1.000	1.000	1.000
總分	**9.000**		
情境分數	**1.000**		

3.3.4

Test Speed	CCCscp AEB				
	GVT Speed				
	20km/h	30km/h	40km/h	50km/h	60km/h
Start from stop	0.500	0.500	0.500	0.500	0.500
20 km/h	1.000	0.250	0.250	0.250	0.250
30 km/h	1.000	1.000	0.250	0.250	0.250
40 km/h	1.000	1.000	1.000	0.250	0.250
50 km/h	1.000	1.000	1.000	1.000	0.250
60 km/h	1.000	1.000	1.000	1.000	1.000
Total	**20.000**				
Scenario Points	**2.000**				

Test Speed	CCCscp FCW				
	GVT Speed				
	20km/h	30km/h	40km/h	50km/h	60km/h
40 km/h	1.000	1.000	1.000	0.250	0.250
50 km/h	1.000	1.000	1.000	1.000	0.250
60 km/h	1.000	1.000	1.000	1.000	1.000
Total	**12.75**				
Scenario Points	**1.000**				

修正後	修正前

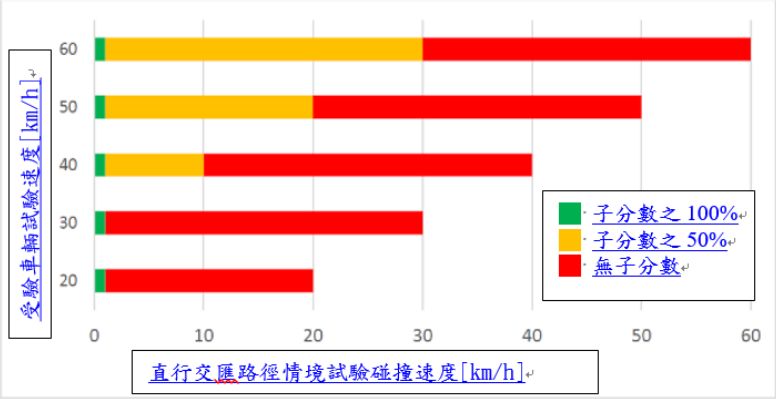


2.4.3.3.7

試驗速度	直行交匯路徑情境試驗-緊急煞車輔助系統				
	全球目標車速度				
	20km/h	30km/h	40km/h	50km/h	60km/h
從靜止啟動	0.500	0.500	0.500	0.500	0.500
20 km/h	1.000	0.250	0.250	0.250	0.250
30 km/h	1.000	1.000	0.250	0.250	0.250
40 km/h	1.000	1.000	1.000	0.250	0.250
50 km/h	1.000	1.000	1.000	1.000	0.250
60 km/h	1.000	1.000	1.000	1.000	1.000
總分	20.000				
情境分數	2.000				

修正後	修正前

試驗速度	直行交匯路徑情境試驗-前方碰撞預警系統				
	全球目標車速度				
	20km/h	30km/h	40km/h	50km/h	60km/h
40 km/h	1.000	1.000	1.000	0.250	0.250
50 km/h	1.000	1.000	1.000	1.000	0.250
60 km/h	1.000	1.000	1.000	1.000	1.000
總分	12.75				
情境分數	1.000				



3.3.5

Car-to-Car Head On			
Scenario	Test Speed		Points
	VUT	Test Target	(speed reduction ≥20km/h)
CCFhos	50 km/h	50 km/h	0.250
	70 km/h	70 km/h	0.250
CCFhol	50 km/h	50 km/h	0.250
	70 km/h	70 km/h	0.250
Total			1.000
Scenario Points			1.000

修正後	修正前

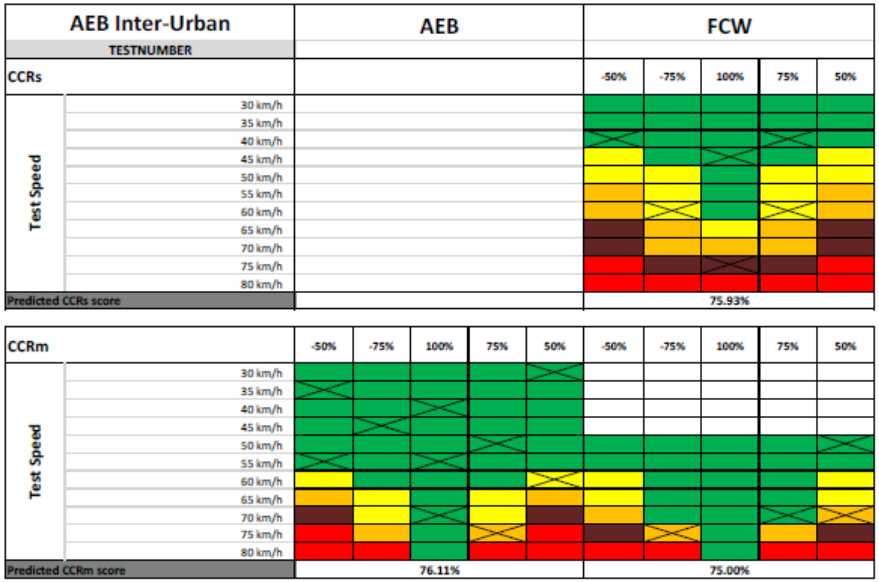
2.4.3.3.8

前方對向來車			
情境	試驗速度		分數 (減速大於等於20km/h)
	受驗車輛	試驗目標	
前方對向來車直行情境試驗	50 km/h	50 km/h	0.250
	70 km/h	70 km/h	0.250
前方對向來車變換車道情境試驗	50 km/h	50 km/h	0.250
	70 km/h	70 km/h	0.250
總分			1.000
情境分數			1.000

3.3.7.1

AEB Car-to-car	Points	Correction Factor	Percentage	Score
CCR AEB				
CCRs	12	1.02	87.4	**0.874 /1.000**
CCRm	15	1.02	100	**1.000 /1.000**
CCRb	4		100	**1.000 /1.000**
CCR FCW				
CCRs	6	0.95	95%	**0.475 /0.500**
CCFtap	6		66.7	**0.667 /1.000**
CCCscp				
AEB	12.5		62.5	**1.250 /2.000**
FCW	12.75		100	**1.000 /1.000**
CCFhol / hos	0.5		50	**0.500 /1.000**
HMI	2		100	**0.500 /0.500**
Total	**7.266 /9.000**			

5.3.7.1



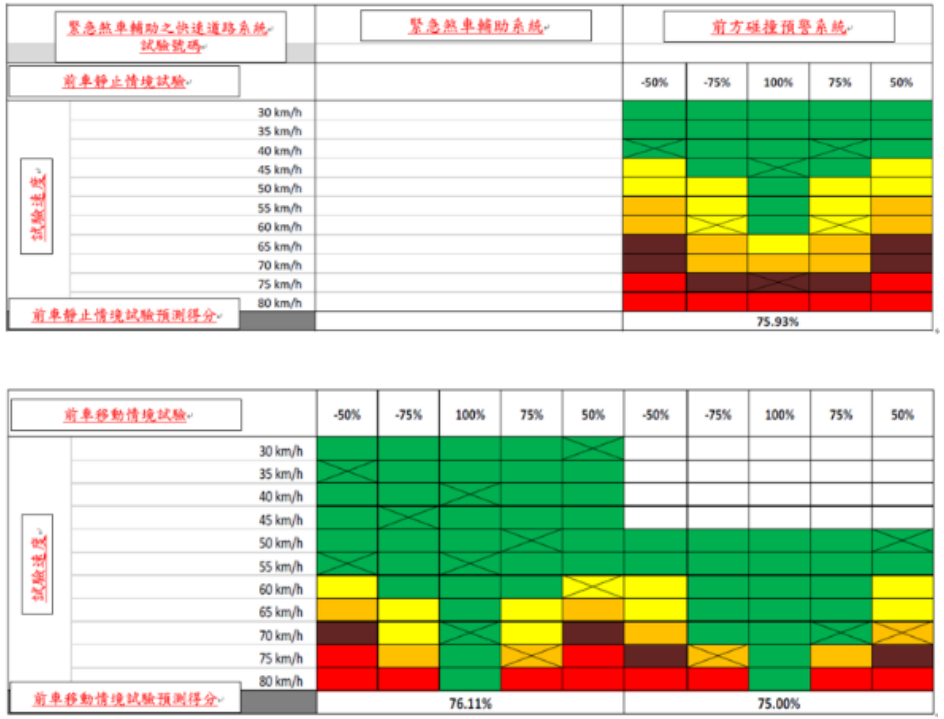
修正後

2.4.3.3.10.1

緊急煞車輔助系統(車對車)	分數	修正係數	百分比	得分
前車情境之緊急煞車輔助系統試驗				
前車靜止情境試驗	12	1.02	87.4	**0.874 / 1.000**
前車移動情境試驗	15	1.02	100	**1.000 / 1.000**
前車煞車情境試驗	4		100	**1.000 / 1.000**
前車情境之前方碰撞預警系統試驗				
前車靜止情境試驗	6	0.95	95	**0.475 / 0.500**
轉彎穿越路徑情境試驗	6		66.7	**0.667 / 1.000**
直行交匯路徑情境試驗				
緊急煞車輔助系統	12.5		62.5	**1.250 / 2.000**
前方碰撞預警系統	12.75		100	**1.000 / 1.000**
前方對向來車變換車道情境試驗 / 前方對向來車直行情境試驗	0.5		50	**0.500 / 1.000**
人機介面	2		100	**0.500 /**

修正前

2.4.3.2.7.1



修正後	修正前

				0.500
總分	**7.266 / 9.000**			

	預測得分	實際試驗得分	修正係數
緊急煞車輔助系統	9.250	9.000	0.973
前方碰撞預警系統	7.750	8.000	1.032

摘要		
前車靜止情境試驗(預測x修正係數)		**78.4%**
前車移動情境試驗(預測x修正係數)	**74.1%**	**77.4%**
前車煞車情境試驗	**100.0%**	**100.0%**
人機介面	**100.0%**	

總分	
緊急煞車輔助系統	**1.305**
前方碰撞預警系統	**0.853**
人機介面	**0.500**

緊急煞車輔助之快速道路系統總分	**2.658**

3.4	5.4

修正後

Colour	Verdict	Applied to Total Score	For sub Scores
Green	'Good'	6.751 – 9.000 points	75.0% - 100.0%
Yellow	'Adequate'	4.501 – 6.750 points	50.0% - 75.0%
Orange	'Marginal'	2.251 – 4.500 points	25.0% - 50.0%
Brown	'Weak'	0.001 – 2.250 points	00.0% - 25.0%
Red	'Poor'	0.000 points	00.0%

2.4.3.4

顏色	判定	適用於總得分	功能性比
綠色	優	6.751-9.000分	75.0%-100.0%
黃色	良好	4.501-6.750分	50.0%-75.0%
橘色	尚可	2.251-4.500分	25.0%-50.0%
棕色	差	0.001-2.250分	00.0%-25.0%
紅色	不良	0.000分	00.0%
灰色	未具備	0.000分	00.0%

修正前

Colour	Verdict	Applied to Total Score	For sub Scores
Green	'Good'	2.251 - 3.000 points	75.0% - 100.0%
Yellow	'Adequate'	1.501 - 2.250 points	50.0% - 75.0%
Orange	'Marginal'	0.751 - 1.500 points	25.0% - 50.0%
Brown	'Weak'	0.001 - 0.750 points	00.0% - 25.0%
Red	'Poor'	0.000 points	00.0

2.4.3.3

顏色	判定	適用於總得分	功能性比
綠色	優	2.251-3.000分	75.0%-100.0%
黃色	良好	1.501-2.250分	50.0%-75.0%
橘色	尚可	0.751-1.500分	25.0%-50.0%
棕色	差	0.001-0.750分	00.0%-25.0%
紅色	不良	0.000分	00.0%
灰色	未具備	0.000分	00.0%

3.12車道輔助系統試驗規章

2025 年版 Euro NCAP 規章	2019 年版 Euro NCAP 規章	修訂 TNCAP 條文草案(第三版)	對應 TNCAP 第二版規章
2 DEFINITIONS … **Emergency Lane Keeping (ELK) –** default ON heading correction that is applied automatically by the vehicle in response to the detection of the vehicle that is about to drift beyond a solid lane marking, the edge of the road or into oncoming or overtaking traffic in the adjacent lane.	**2 DEFINITIONS** … **Emergency Lane Keeping (ELK) –** default ON heading correction that is applied automatically by the vehicle in response to the detection of the vehicle that is about to drift beyond the edge of the road or into oncoming or overtaking traffic in the adjacent lane.	3.12.1 名詞釋義 … 3.12.1.2 緊急車道維持輔助系統(Emergency Lane Keeping, ELK):車輛偵測到即將偏離目前行駛之實線車道標線、道路邊緣或相鄰車道對向來車或車道超車的交通情境下，所自動施加之方向性修正。	3.12.1 名詞釋義 … 3.12.1.2 緊急車道維持輔助系統(Emergency Lane Keeping, ELK):車輛偵測到即將偏離目前行駛之道路邊緣或相鄰車道對向來車或車道超車的交通情境下，所自動施加之方向性修正。
Lane Keeping Assist (LKA) – heading correction that is applied automatically by the vehicle in response to the detection of the vehicle that is about to drift beyond a delineated edge line of the current travel lane. …	**Lane Keeping Assist (LKA) –** heading correction that is applied automatically by the vehicle in response to the detection of the vehicle that is about to drift beyond a delineated edge line or road edge of the current travel lane. …	3.12.1.3 車道維持輔助系統（Lane Keeping Assist, LKA）：車輛偵測到即將偏離目前行駛之車道邊界標線時，所自動施加之方向性修正。 …	3.12.1.3 車道維持輔助系統（Lane Keeping Assist, LKA）:車輛偵測到即將偏離目前行駛之車道邊界標線或道路邊緣時，所自動施加之方向性修正。 …
Global Vehicle Target (GVT) – means the vehicle target used in this protocol as defined in ISO 19206-3:2021	**Global Vehicle Target (GVT)** – means the vehicle target used in this protocol	3.12.1.7 全球目標車（Global Vehicle Target, GVT）：本試驗規章使用ISO19206-3:2021 定義之目標車。	3.12.1.7 全球目標車（Global Vehicle Target, GVT）：本試驗規章(LSS test protocol)使用之目標車。
Euro NCAP Motorcyclist Target (EMT) – means the Motorcyclist target used in this protocol as specified in the		3.12.1.8 目標機車騎士(Euro NCAP Motorcyclist Target, EMT)：本試驗規章使用 ISO19206-5 定義之目標	

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deliverable D2.1 of the MUSE project (Fritz and Wimmer 2019) which at time of publication is to be replaced with ISO 19206-5.		機車騎士。	
Real Motorcycle – Means a motorcyclist target that can be used in the Blind-Spot Monitoring Tests of this protocol, as an alternative to the EMT. The Real Motorcycle shall be a type approved two-wheeled motorcycle, with a maximum speed of at least 80km/h by design, without front fairing or windshield. It shall closely resemble the EMT (as specified in section 2.1 of deliverable D2.1 of the MUSE project), thus staying within the mean dimensions of the most registered middleweight naked motorcycles in Europe (i.e. wheelbase >1405mm. and <1445mm.).		3.12.1.9 真實機車(Real Motorcycle):係指本試驗規章中可用於取代目標機車騎士進行盲點偵測試驗之目標機車。該真實機車應為通過車輛型式認證之雙輪機車，其最高速度設計值應至少達 80 公里/小時，且無前擋板或擋風玻璃。其應與目標機車騎士相似，且軸距應大於 1405 公釐並小於 1445 公釐。	
Time To Collision (TTC) – means the remaining time before the VUT strikes the GVT, assuming that the VUT and	**Time To Collision (TTC)** – means the remaining time before the VUT strikes the GVT, assuming that the VUT and	3.12.1.10 碰撞時間（Time To Collision, TTC）：若受驗車輛與全球目標車皆依其速度向前行進，受驗車輛會碰	3.12.1.8 碰撞時間（Time To Collision, TTC）：若受驗車輛與全球目標車皆依其速度向前行進，受驗車輛會碰撞

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GVT would continue to travel with the speed it is travelling. **Lane Edge** – means the inner side of the lane marking or the road edge **Distance To Lane Edge (DTLE)** – means the remaining lateral distance (perpendicular to the Lane Edge) between the Lane Edge and most outer edge of the tyre, before the VUT crosses Lane Edge, assuming that the VUT would continue to travel with the same lateral velocity towards it. **Driver Intention Monitoring system** – means a system that is effective at distinguishing intentional from unintentional lane crossing and suppressing undesired interventions and/or warnings.	GVT would continue to travel with the speed it is travelling. **Lane Edge** – means the inner side of the lane marking or the road edge **Distance To Lane Edge (DTLE)** – means the remaining lateral distance (perpendicular to the Lane Edge) between the Lane Edge and most outer edge of the tyre, before the VUT crosses Lane Edge, assuming that the VUT would continue to travel with the same lateral velocity towards it.	撞全球目標車之預估時間值。 3.12.1.11 車道邊緣(Lane Edge):係指車道標線內側或道路邊緣。 3.12.1.12 車道邊緣剩餘距離(Distance To Lang Edge, DTLE)：假設受驗車輛以相同側向速度偏離向車道邊緣，在受驗車輛越過車道邊緣前，車道邊緣與輪胎外緣間所剩餘之橫向距離（與車道邊緣垂直）。 3.12.1.13 駕駛意圖監測系統(Driver Intention Monitoring system, DIM):係指系統能有效區分駕駛是否為刻意與非刻意之車道穿越，並抑制非必要之介入及/或警示。	全球目標車之預估時間值。 3.12.1.9 車道邊緣(Lane Edge):係指車道標線內側或道路邊緣。 3.12.1.10 車道邊緣剩餘距離(Distance To Lang Edge, DTLE):假設受驗車輛以相同側向速度偏離向車道邊緣，在受驗車輛越過車道邊緣前，車道邊緣與輪胎外緣間所剩餘之橫向距離（與車道邊緣垂直）。
3 REFERENCE SYSTEM … **3.2 Lateral Path Error** 3.2.1 The lateral path error is determined as the lateral distance between the	**3 REFERENCE SYSTEM** … **3.2 Lateral Path Error** 3.2.1 The lateral path error is determined as the lateral distance between the	3.12.2 參考系統 … 3.12.2.2 側向偏移量 側向偏移量之定義為受驗車輛前軸中心與預定路徑平行之側向距離，如下	3.12.2 參考系統 … 3.12.2.2 側向偏移量 側向偏移量之定義為受驗車輛前方中心與預定路徑平行之側向距離，如下

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centre of the front axle of the VUT when measured in parallel to the intended path as shown in the figure below. This measure applies during both the straight line approach and the curve that establishes the lane departure. …	centre of the front of the VUT when measured in parallel to the intended path as shown in the figure below. This measure applies during both the straight line approach and the curve that establishes the lane departure. …	圖所示。本量測適用於直線行進後偏移之車道偏離。 …	圖所示。本量測適用於直線行進後偏移之車道偏離。 …
4 MEASURING EQUIPMENT … **4.2 Measurements and Variables** 4.2.1 Time T •T_0, time where manoeuvre starts with 2s straight path T_0 •T_{LDW}, time where LDW activates T_{LDW} •T_{steer}, time where VUT enters in curve segment T_{steer} •$T_{crossing}$, time where VUT crosses the line or road edge $T_{crossing}$	**4 MEASURING EQUIPMENT** … **4.2 Measurements and Variables** 4.2.1 Time T •T_0, time where manoeuvre starts with 2s straight path T_0 •T_{LKA}, time where LKA activates (for calibration purposes only if required) T_{LKA} •T_{LDW}, time where LDW activates T_{LDW} •T_{steer}, time where VUT enters in curve segment T_{steer} •$T_{crossing}$, time where VUT crosses the line or road edge $T_{crossing}$	3.12.3 量測配備 … 3.12.3.2 量測與變數 3.12.3.2.1時間 T (1) T_0，直線行進兩秒之開始時間 T_0 (2) T_{LDW}，LDW系統啟動時間 T_{LDW} (3) T_{steer}，受驗車輛進入曲線段之時間 T_{steer} (4) $T_{crossing}$，受驗車輛越過直線或道路邊緣之時間 $T_{crossing}$	3.12.3 量測配備 … 3.12.3.2 量測與變數 3.12.3.2.1時間 T (1) T_0，直線行進兩秒之開始時間 T_0 (2) T_{LKA}，LKA系統啟動時間（視需要進行校正） T_{LKA} (3) T_{LDW}，LDW系統啟動時間 T_{LDW} (4) T_{steer}，受驗車輛進入曲線段之時間 T_{steer} (5) $T_{crossing}$，受驗車輛越過直線或道路邊緣之時間 $T_{crossing}$

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4.2.2 Position of the VUT during the entire test X_{VUT}, Y_{VUT} 4.2.3 Position of the GVT during the entire test X_{GVT}, Y_{GVT} 4.2.4 Speed of the VUT during the entire test $V_{long,VUT}$ $V_{lat,VUT}$ 4.2.5 Speed of the GVT during the entire test V_{GVT} 4.2.6 Yaw velocity of the VUT during the entire test Ψ_{VUT} 4.2.7 Yaw velocity of the GVT during the entire test Ψ_{GVT} 4.2.8 Steering wheel velocity of the VUT during the entire test Ω_{VUT} …	4.2.2 Position of the VUT during the entire test X_{VUT}, Y_{VUT} 4.2.3 Position of the GVT during the entire test X_{GVT}, Y_{GVT} 4.2.4 Speed of the VUT during the entire test $V_{long,VUT}$ $V_{lat,VUT}$ 4.2.5 Speed of the GVT during the entire test V_{GVT} 4.2.6 Yaw velocity of the VUT during the entire test Ψ_{VUT} 4.2.7 Yaw velocity of the GVT during the entire test Ψ_{GVT} 4.2.8 Steering wheel velocity of the VUT during the entire test Ω_{VUT} …	3.12.3.2.2 試驗過程中受驗車輛之位置 X_{VUT} Y_{VUT} 3.12.3.2.3 試驗過程中全球目標車之位置 X_{GVT} Y_{GVT} 3.12.3.2.4 試驗過程中受驗車輛之速度 $V_{long,VUT}$ $V_{lat,VUT}$ 3.12.3.2.5 試驗過程中全球目標車之速度 V_{GVT} 3.12.3.2.6 試驗過程中受驗車輛之橫擺角速度 Ψ_{VUT} 3.12.3.2.7 試驗過程中全球目標車之橫擺角速度 Ψ_{GVT} 3.12.3.2.8 試驗過程中受驗車輛之方向盤轉速 Ω_{VUT} …	3.12.3.2.2 試驗過程中受驗車輛之位置 X_{VUT} Y_{VUT} 3.12.3.2.3 試驗過程中全球目標車之位置 X_{GVT} Y_{GVT} 3.12.3.2.4 試驗過程中受驗車輛之速度 $V_{long,VUT}$ $V_{lat,VUT}$ 3.12.3.2.5 試驗過程中全球目標車之速度 V_{GVT} 3.12.3.2.6 試驗過程中受驗車輛之橫擺角速度 Ψ_{VUT} 3.12.3.2.7 試驗過程中全球目標車之橫擺角速度 Ψ_{GVT} 3.12.3.2.8 試驗過程中受驗車輛之方向盤轉速 Ω_{VUT} …
5 GLOBAL VEHICLE TARGET **5.1 Specification** 5.1.1 Conduct the tests in this protocol using the Global Vehicle Target (GVT) as shown in Figure 5-1 below. The GVT replicates the visual, radar and LIDAR attributes of a typical M_1	**5 GLOBAL VEHICLE TARGET** **5.1 Specification** 5.1.1 Conduct the tests in this protocol using the Global Vehicle Target (GVT) as shown in Figure 3 below. The GVT replicates the visual, radar and LIDAR attributes of a typical M_1 passenger	3.12.4 全球目標車 3.12.4.1 規格 3.12.4.1.1 進行試驗時，應使用全球目標車（GVT），如圖 3 所示。全球目標車模擬一般 M_1 類小客車之光學儀器、雷達及光達（LIDAR）。	3.12.4 全球目標車 3.12.4.1 規格 3.12.4.1.1 進行試驗時，應使用全球目標車（GVT），如圖 3 所示。全球目標車模擬一般 M_1 類小客車之光學儀器、雷達及光達（LIDAR）。

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passenger vehicle.  Figure 5-1: Global Vehicle Target (GVT)	vehicle.  Figure 3: Global Vehicle Target (GVT)	 圖 3：全球目標車(GVT)	 圖 3：全球目標車(GVT)
5.1.2 To ensure repeatable results the combination of the propulsion system and GVT must meet the requirements as detailed in ISO 19206-3.		3.12.4.1.2 為確保試驗結果之再現性，推進系統及全球目標車應符合 ISO 19206-3。	
5.1.3 Only equipment listed in the current version of TB029 - Suppliers List may be used for testing. The current version can be found on the Euro NCAP website.		3.12.4.1.3 僅限使用列於最新版 TB029 供應商名單中的設備進行測試。	
5.1.4 The GVT is designed to work with the following types of sensors:	5.1.2 The GVT is designed to work with the following types of sensors:	3.12.4.1.4 全球目標車應能辨識下列型式之感測器：	3.12.4.1.2 全球目標車應能辨識下列型式之感測器：

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• Radar (24 and 77 GHz) • LIDAR • Camera When a manufacturer believes that the GVT is not suitable for another type of sensor system used by the VUT but not listed above, the manufacturer is asked to contact the Euro NCAP Secretariat.	• Radar (24 and 77 GHz) • LIDAR • Camera When a manufacturer believes that the GVT is not suitable for another type of sensor system used by the VUT but not listed above, the manufacturer is asked to contact the Euro NCAP Secretariat.	(1) 雷達（24 與 77 GHz） (2) 光達 (3) 攝影機 如車輛業者認為受驗車裝設非上述之其他型式感測器且不適用於全球目標車時，則車輛業者應與 TNCAP 執行機構聯繫。	(1) 雷達（24 與 77 GHz） (2) 光達 (3) 攝影機 如車輛業者認為受驗車裝設非上述之其他型式感測器且不適用於全球目標車時，則車輛業者應與 TNCAP 執行機構聯繫。
6 TEST CONDITIONS … 6.2.4 Unladen Kerb Mass 6.2.4.1 If applicable, fill up the tank with fuel to at least 90% of the tank's capacity of fuel. … 6.2.5.7 Vehicle dimensional measurements shall be taken. For purposes of this test procedure, vehicle dimensions shall be represented by a two-dimensional polygon defined by the lateral and longitudinal dimensions relative to the centroid of the vehicle using the standard ISO 8855 coordinate system. The corners of the polygon are	**6 TEST CONDITIONS** … 6.2.4 Unladen Kerb Mass 6.2.4.1 Fill up the tank with fuel to at least 90% of the tank's capacity of fuel. … 6.2.5.7 Vehicle dimensional measurements shall be taken. For purposes of this test procedure, vehicle dimensions shall be represented by a two dimensional polygon defined by the lateral and longitudinal dimensions relative to the centroid of the vehicle using the standard SAE coordinate system. The corners of the polygon are	3.12.5 試驗條件 … 3.12.5.2.4 空車重量（Unladen Kerb Mass） 3.12.5.2.4.1 車輛燃油箱至少裝滿 90%容量的燃油(如適用)。 … 3.12.5.2.5.7 應進行車輛尺寸量測。在此試驗中，車輛尺寸應依 ISO 8855 標準之座標系統規範呈現，包含以 2D 多邊形定義出相對於車輛中心之橫向與縱向尺寸。多邊形係以各輪胎外緣與路面接觸之平面所得之橫向與縱向位置組成。平面係指輪胎的最外緣與軸距垂直相交至地面，如圖 6 所示。	3.12.5 試驗條件 … 3.12.5.2.4 空車重量（Unladen Kerb Mass） 3.12.5.2.4.1 車輛燃油箱至少裝滿 90%容量的燃油。 … 3.12.5.2.5.7 應進行車輛尺寸量測。在此試驗中，車輛尺寸應按標準美國自動車工程協會（SAE）座標系統（SAE coordinate system）規範呈現，包含以 2D 多邊形定義出相對於車輛中心之橫向與縱向尺寸。多邊形係以各輪胎外緣與路面接觸之平面所得之橫向與縱向位置組成。平面係指輪胎的最外緣與軸距垂直相交至地面，如圖 6

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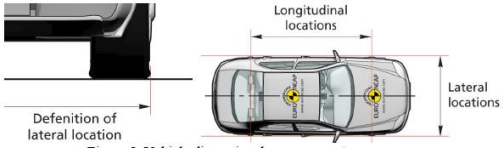
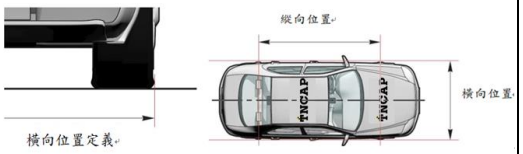
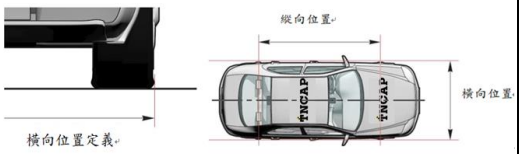
defined by the lateral and longitudinal locations where the plane of the outside edge of each tyre makes contact with the road. This plane is defined by running a perpendicular line from the outer most edge of the tyre to the ground at the wheelbase, as illustrated in Figure 6-3.	defined by the lateral and longitudinal locations where the plane of the outside edge of each tyre makes contact with the road. This plane is defined by running a perpendicular line from the outer most edge of the tyre to the ground at the wheelbase, as illustrated in Figure 5.		所示。
			
Figure 6-3: Vehicle dimensional measurements	Figure 5: Vehicle dimensional measurements	圖 6：車輛尺寸量測	圖 6：車輛尺寸量測
6.2.5.8 The vehicle’s wheelbase and the lateral and longitudinal locations shall be measured and recorded.	6.2.5.8 The vehicle’s wheelbase and the lateral and longitudinal locations shall be measured and recorded.	3.12.5.2.5.8 車輛軸距及橫向與縱向位置皆應量測並記錄。	3.12.5.2.5.8 車輛軸距及橫向與縱向位置皆應量測並記錄。
6.2.5.9 Requirements for Steering Robot friction levels should be checked prior to testing, as detailed in the Technical Bulletin TB 038.		3.12.5.2.5.9 試驗前應確認轉向機器人之摩擦力等級，詳參技術公告 TB 038。	
7 TEST PROCEDURE … **7.2 Test Scenarios**	**7 TEST PROCEDURE** … **7.2 Test Scenarios**	3.12.6 試驗程序 … 3.12.6.2 試驗情境	3.12.6 試驗程序 … 3.12.6.2 試驗情境

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The performance of the VUT LSS is assessed in different scenarios that are applicable to the system: - Emergency Lane Keeping (only when LSS system is default ON) - Lane Keep Assist - Lane Departure Warning - Blind Spot Monitoring (BSM)	The performance of the VUT LSS is assessed in different scenarios that are applicable to the system: - Emergency Lane Keeping (only when LSS system is default ON) - Lane Keep Assist - Lane Departure Warning There is no specific performance test for Blind Spot Monitoring Systems (warning only).	車道輔助系統之受驗車輛性能，其系統應以下述不同情境進行評等: (1) 緊急車道維持輔助系統(僅車道輔助系統預設為開啟狀態時，才需執行此項) (2) 車道維持輔助系統 (3) 車道偏離輔助警示系統 (4) 盲點偵測系統(BSM)	車道輔助系統之受驗車輛性能，其系統應以下述不同情境進行評等: (1) 緊急車道維持輔助系統(僅車道輔助系統預設為開啟狀態時，才需執行此項) (2) 車道維持輔助系統 (3) 車道偏離輔助警示系統 無盲點偵測系統之特定性能試驗（僅警示）
7.2.1 Tests in all scenarios (except BSM) will be performed with 0.1 m/s incremental steps within the lateral velocities specified for the test scenarios.	7.2.1 Tests in all scenarios will be performed with 0.1 m/s incremental steps within the lateral velocities specified for the test scenarios.	3.12.6.2.1 依各試驗情境(盲點偵測系統除外)之側向速度範圍，所有試驗情境以每次增加 0.1 m/s 進行。	3.12.6.2.1 依各試驗情境之側向速度範圍，所有試驗情境以每次增加 0.1 m/s 進行。
7.2.2 For testing purposes, assume an initial straight-line path followed by a fixed radius as specified for the test scenarios, followed again by a straight line, hereby known as the test path. Control the VUT with driver inputs or using alternative control systems that can modulate the vehicle controls as	7.2.2 For testing purposes, assume an initial straight line path followed by a fixed radius as specified for the test scenarios, followed again by a straight line, hereby known as the test path. Control the VUT with driver inputs or using alternative control systems that can modulate the vehicle controls as	3.12.6.2.2 試驗過程中，假設試驗路徑一開始為直線，緊接以指定試驗情境之固定弧度，再接著又為直線路徑。可由駕駛直接控制受驗車輛，另試驗若有需要，可以使用調節車輛控制之控制系統作替代。	3.12.6.2.2 試驗過程中，假設試驗路徑一開始為直線，緊接以指定試驗情境之固定弧度，再接著又為直線路徑。可由駕駛直接控制受驗車輛，另試驗若有需要，可以使用調節車輛控制之控制系統作替代。

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necessary to perform the tests. 7.2.2.1 The vehicle manufacturer shall provide information describing the location when the closed loop path and/or speed control shall be ended so as not to interfere with the system intervention for each test. The test laboratory shall then verify the release point for the highest lateral velocity. Otherwise when the vehicle manufacturer does not provide information, two calibration runs shall be performed for each lateral velocity in order to determine when the system activates. Compare steering wheel torque, vehicle speed or yaw rate of both runs and determine where there is a notable difference that identifies the location of intervention. … 7.2.2.3 If the intervention point of the function occurs before the target $Vlat_{VUT}$ is reached, the test laboratory will conduct a verification check of the	necessary to perform the tests. 7.2.2.1 The vehicle manufacturer shall provide information describing the location when the closed loop path and/or speed control shall be ended so as not to interfere with the system intervention for each test. Otherwise for each lateral velocity, two calibration runs shall be performed in order to determine when the system activates. Compare steering wheel torque, vehicle speed or yaw rate of both runs and determine where there is a notable difference that identifies the location of intervention. …	3.12.6.2.2.1 車輛業者應提供描述閉迴路路徑（closed loop path）及/或速度控制之結束時機點資訊，以避免每次試驗時干擾系統作動，檢測機構應驗證最高側向速度的釋放點；否則若車輛業者未提供相關資訊，則應於每次側向速度試驗前，應進行兩次校準行駛，以判定系統何時啟動。比較兩次駕駛之方向盤扭力、車輛速度、或橫擺角速度（yaw rate）是否顯著不同，以識別系統介入時機。 … 3.12.6.2.2.3 若功能介入點在達到目標 $Vlat_{,VUT}$ 之前發生，檢測機構應進行 $Vlat_{,VUT}$=0.6 m/s（包括虛線及實線）驗證。驗證時，行駛於一直線及	3.12.6.2.2.1 車輛業者應提供描述閉迴路路徑（closed loop path）及/或速度控制之結束時機點資訊，以避免每次試驗時干擾系統作動；否則應於每次側向速度試驗前，應進行兩次校準行駛，以判定系統何時啟動。比較兩次駕駛之方向盤扭力、車輛速度、或橫擺角速度（yaw rate）是否顯著不同，以識別系統介入時機。 …

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$Vlat_{VUT}$=0.6m/s test case (both for dashed and solid line) using a straight-line vehicle path intersecting with a curved lane marking which results in the yaw angle (Ψ_{VUT}) shown in 7.2.3. A maximum of 3 runs shall be conducted (both for solid and dashed line), where the system intervention and resulting DTLE is monitored.		曲線車道標線相交之路徑，並產生如 3.12.6.2.3 規範所示之橫擺角(Ψ_{VUT})。針對實線及虛線測試，各進行最多 3 次試驗，藉由系統介入情形監測所產生之車道邊緣剩餘距離（DTLE）。	
7.2.2.4 When the closed loop path ends, the driver's hands or the control will remain passive on the steering wheel without applying deliberate force but reflecting the behaviour of an inattentive driver holding the steering wheel.		3.12.6.2.2.4 當閉迴路徑結束時，駕駛的手或控制器應保持在方向盤上，不施加刻意之力量，以模擬駕駛分心握住方向盤之行為。	3
7.2.3 The following parameters should be used to create the test paths: (請參末頁表格)	7.2.3 The following parameters should be used to create the test paths: (請參末頁表格)	3.12.6.2.3 應使用以下參數建置試驗路徑： (請參末頁表格)	3.12.6.2.3 應使用以下參數建置試驗路徑： (請參末頁表格)

$Vlat_{VUT}$ [m/s]	R [m]	Ψ_{VUT} [°]	d1 [m]	d2 [m]
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80
0.5		1.43	0.38	0.75
0.6		1.72	0.54	0.60
0.7		2.01	0.74	0.53
0.8		2.29	0.96	0.40
0.9		2.58	1.22	0.23
1.0		2.87	1.50	0.00

$Vlat_{VUT}$ [m/s]	R [m]	Ψ_{VUT} [°]	d1 [m]	d2 [m]
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80
0.5		1.43	0.38	0.75
0.6		1.72	0.54	0.60

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Alternatively, where a vehicle features a Driver Intention Monitoring (DIM) system alongside LKA and/or LDW, the following parameters may be used to create the test paths (choice at the discretion of the OEM prior confirmation by the Euro NCAP Secretariat that the DIM system is deemed eligible):		或者，當車輛配備駕駛意圖監測系統(DIM)並搭載車道維持輔助系統及/或車道偏離輔助警示系統時，可使用以下參數建立試驗路徑（由車輛業者選擇，且需先經由 TNCAP 執行機構確認 DIM 系統符合資格）。(請參末頁表格)	
Where the lateral offset d from the lane marking or road edge: d = d1 + d2 + Half of the vehicle width (m) With: d1: Lateral distance travelled during curve establishing yaw angle (m) d2: Lateral distance travelled during V_{lat} steady state (m)	Where the lateral offset d from the lane marking or road edge: d = d1 + d2 + Half of the vehicle width (m) With: d1: Lateral distance travelled during curve establishing yaw angle (m) d2: Lateral distance travelled during V_{lat} steady state (m)	車道標線或道路邊緣的側向偏移量: d = d1 + d2 +車輛寬度的一半(m) 以及: d1:橫擺角曲線建立時之側向偏離距離（m） d2:側向速度穩定狀態之側向偏離距離（m） (請參末頁圖示)	車道標線或道路邊緣的側向偏移量: d = d1 + d2 +車輛寬度的一半(m) 以及: d1:橫擺角曲線建立時之側向偏離距離（m） d2:側向速度穩定狀態之側向偏離距離（m） (請參末頁圖示)

$V_{lat,VUT}$ [m/s]	R [m]	Ψ_{VUT} [°]	d1 [m]	d2 [m]
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80
0.5	800	1.43	0.25	1.00
0.6		1.72	0.36	1.20
0.7		2.01	0.49	1.40
0.8		2.29	0.64	1.60
0.9		2.58	0.81	1.80
1.0		2.87	1.00	2.00

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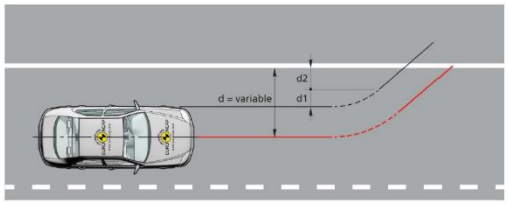
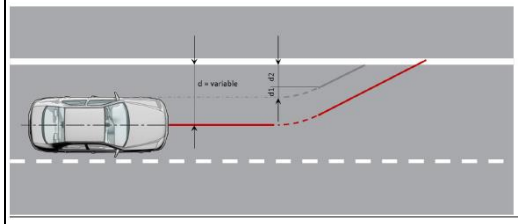
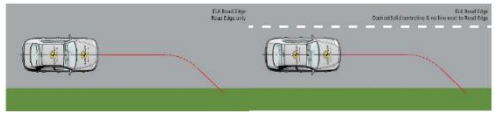
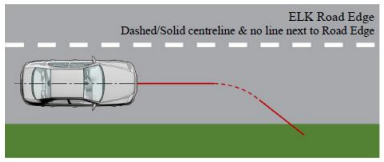
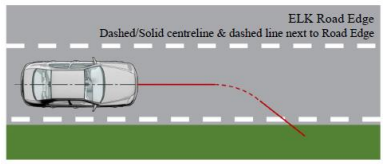
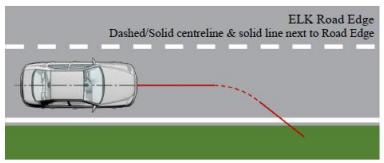
 Figure 7-1: Vehicle paths definition			
7.2.4 Emergency Lane Keeping tests 7.2.4.1 Road Edge tests ELK Road Edge tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.6m/s for departures at the front passenger side only.  Figure 7-2: ELK Road Edge scenarios	7.2.4 Emergency Lane Keeping tests 7.2.4.1 Road Edge tests ELK Road Edge tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.5m/s for departures at the front passenger side only.   	3.12.6.2.4 緊急車道維持輔助系統試驗 3.12.6.2.4.1 道路邊緣試驗 道路邊緣試驗應於側向速度 0.2 至 0.6m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，其僅適用於朝第一排乘客側之偏離。 (請參末頁圖示)	3.12.6.2.4 緊急車道維持輔助系統試驗 3.12.6.2.4.1 道路邊緣試驗 道路邊緣試驗應於側向速度 0.2 至 0.5m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，其僅適用於朝第一排乘客側之偏離。 (請參末頁圖示)

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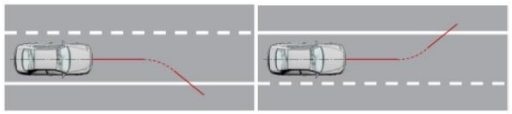
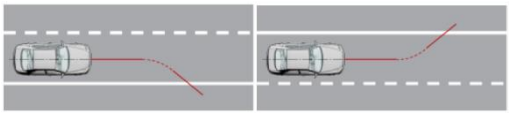
7.2.4.2 Solid line tests ELK Solid line tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.6m/s for departures at both sides of the vehicle in a fully marked lane. (The non-tested side can be solid or dashed)  Figure 7-3: ELK Solid Line scenarios		3.12.6.2.4.2 實線試驗 實線試驗應於側向速度 0.2 至 0.6m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，分別朝車輛兩側之完整車道標線進行偏移。(未試驗另一側可為實線或虛線)  圖 9: 緊急車道維持輔助系統之實線試驗情境	
7.2.4.3 Oncoming vehicle 7.2.4.3.1 For the oncoming scenario the GVT will follow a straight-line path in the lane adjacent to the VUT's initial position, in the opposite direction to the VUT. The straight-line path of the target will be 1.5m from the inner side of the centre dashed lane marking of the VUT lane.	7.2.4.2 Oncoming vehicle 7.2.4.2.1 For the oncoming scenario the GVT will follow a straight line path in the lane adjacent to the VUT's initial position, in the opposite direction to the VUT. The straight line path of the target will be 1.5m from the inner side of the centre dashed lane marking.	3.12.6.2.4.3 對向來車試驗 3.12.6.2.4.3.1 對向來車之試驗情境，全球目標車之直線車道，其相鄰於受驗車輛初始位置並與其行駛方向相反。全球目標車之中心線應距受驗車輛車道中之虛線標線內側 1.5m。	3.12.6.2.4.2 對向來車試驗 3.12.6.2.4.2.1 對向來車之試驗情境，全球目標車之直線車道，其相鄰於受驗車輛初始位置並與其行駛方向相反。全球目標車之中心線應距車道中之虛線標線內側 1.5m。
7.2.4.3.2 The paths of the VUT and	7.2.4.2.2 The paths of the VUT and	3.12.6.2.4.3.2 同步受驗車輛及全球目	3.12.6.2.4.2.2 同步受驗車輛及全球目

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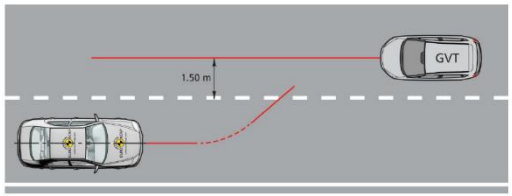
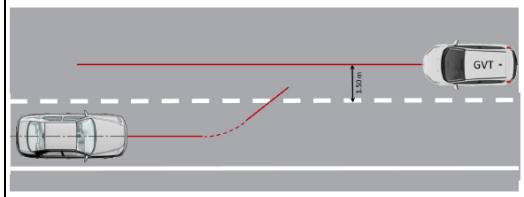
target vehicle will be synchronised so that the front edges of the vehicle meet with a lateral position that gives a 10% overlap (assuming no system reaction) of the width of the VUT.  Figure 7-4: ELK Oncoming vehicle scenario paths	target vehicle will be synchronised so that the front edges of the vehicle meet with a lateral position that gives a 10% overlap (assuming no system reaction) of the width of the VUT.  	標車之路徑，使得車輛的前緣側方寬度 10%重疊處，為雙方車輛發生碰撞之位置（若系統未作動）。 (請參末頁圖示)	標車之路徑，使得車輛的前緣側方寬度 10%重疊處，為雙方車輛發生碰撞之位置（若系統未作動）。 (請參末頁圖示)
7.2.4.3.3 ELK oncoming vehicle tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.6m/s for departures at the driver side only.	7.2.4.2.3 ELK oncoming vehicle tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.3 to 0.6m/s for departures at the driver side only.	3.12.6.2.4.3.3 對向來車試驗應於側向速度 0.2 至 0.6m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，僅適用於朝駕駛側之偏離。	3.12.6.2.4.2.3 對向來車試驗應於側向速度 0.3 至 0.6m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，僅適用於朝駕駛側之偏離。
7.2.4.4 Overtaking vehicle 7.2.4.4.1 For the overtaking scenario a GVT will follow a straight-line path in the lane adjacent to the VUT's initial position at the driver side, in the same direction as the VUT. The straight-line	7.2.4.3 Overtaking vehicle 7.2.4.3.1 For the overtaking scenario a GVT will follow a straight line path in the lane adjacent to the VUT's initial position at the driver side, in the same direction as the VUT. The straight line	3.12.6.2.4.4 車道超車試驗 3.12.6.2.4.4.1 車道超車之試驗情境，全球目標車之直線車道，其相鄰於受驗車輛初始位置並與其行駛方向相同。全球目標車之中心線應距受驗車輛車道之虛線標線內側 1.5m。	3.12.6.2.4.3 車道超車試驗 3.12.6.2.4.3.1 車道超車之試驗情境，全球目標車之直線車道，其相鄰於受驗車輛初始位置並與其行駛方向相同。全球目標車之中心線應距車道之虛線標線內側 1.5m。

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path of the target will be 1.5m from the inner side of the centre dashed lane marking of the VUT lane.	path of the target will be 1.5m from the inner side of the centre dashed lane marking.		
7.2.4.4.2 The paths of the VUT and target vehicle will be synchronised so that the longitudinal position of the leading edge of the target vehicle is equal to that of the rear axle of the VUT at the impact point (assuming no system reaction).	7.2.4.3.2The paths of the VUT and target vehicle will be synchronised so that the longitudinal position of the leading edge of the target vehicle is equal to that of the rear axle of the VUT at the impact point (assuming no system reaction).	3.12.6.2.4.4.2 同步受驗車輛及全球目標車之路徑，使得全球目標車之縱向位置前緣與受驗車輛之縱向位置後軸，為雙方車輛發生碰撞之位置(若系統未作動)。	3.12.6.2.4.3.2 同步受驗車輛及全球目標車之路徑，使得全球目標車之縱向位置前緣與受驗車輛之縱向位置後軸，為雙方車輛發生碰撞之位置(若系統未作動)。
7.2.4.4.3 ELK overtaking vehicle tests will be performed with 0.1m/s incremental steps within the lateral velocity range of 0.2 to 0.6m/s for unintentional lane change and 0.5 to 0.7m/s for intentional lane changes for departures at the driver side only.	7.2.4.3.3 ELK overtaking vehicle tests will be performed with 0.1m/s incremental steps within the lateral velocity range of 0.3 to 0.6m/s for unintentional lane change and 0.5 to 0.7m/s for intentional lane changes for departures at the driver side only.	3.12.6.2.4.4.3 車道超車試驗應於側向速度 0.2 至 0.6m/s 範圍內之非刻意之變換車道，以及側向速度 0.5 至 0.7m/s 之刻意變換車道，以每次增加 0.1 m/s 側向速度進行，僅適用於朝駕駛側之偏離。	3.12.6.2.4.3.3 車道超車試驗應於側向速度 0.3 至 0.6m/s 範圍內之非刻意之變換車道，以及側向速度 0.5 至 0.7m/s 之刻意變換車道，以每次增加 0.1 m/s 側向速度進行，僅適用於朝駕駛側之偏離。
7.2.4.4.4 Both unintentional and intentional lane changes are tested in two situations: - GVT and VUT travel at the same speed (no relative velocity)	7.2.4.3.4 Both unintentional and intentional lane changes are tested in two situations: - GVT and VUT travel at the same speed (no relative velocity)	3.12.6.2.4.4.4 應於下述兩種情況，進行非刻意與刻意的車道變換試驗： (1) 全球目標車及受驗車輛以相同之速度行駛（無相對速度） (2) 全球目標車 @ 80km /h 超車受	3.12.6.2.4.3.4 應於下述兩種情況，進行非刻意與刻意的車道變換試驗： (1) 全球目標車及受驗車輛以相同之速度行駛（無相對速度） (2) 全球目標車 @ 80km /h 超車受

<table>
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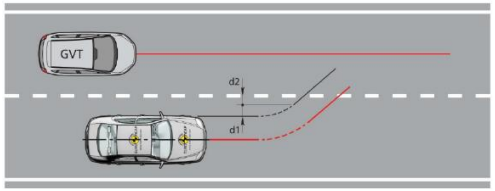
<tr>
<td>- GVT @ 80km/h is overtaking the VUT @ 72km/h (relative velocity of 8km/h)

7.2.4.4.5 The following parameters should be used to create the test paths for the intentional lane change tests where the turn signal is applied at 1.0s ± 0.5s before T_{STEER}:
<table>
<tr><th>$Vlat_{VUT}$ [m/s]</th><th>R [m]</th><th>Ψ_{VUT} [°]</th><th>d1 [m]</th><th>d2 [m]</th></tr>
<tr><td>0.5</td><td rowspan="3">800</td><td>1.43</td><td>0.25</td><td>0.75</td></tr>
<tr><td>0.6</td><td>1.72</td><td>0.36</td><td>0.60</td></tr>
<tr><td>0.7</td><td>2.01</td><td>0.49</td><td>0.53</td></tr>
</table>
Where the lateral offset d from the lane marking:
d = d1 + d2 + Half of the vehicle width (m)
With:
d1: Lateral distance travelled during curve establishing yaw angle (m)
d2: Lateral distance travelled during V_{lat} steady state (m)


</td>
<td>- GVT @ 80km/h is overtaking the VUT @ 72km/h (relative velocity of 8km/h)

7.2.4.3.4 The following parameters should be used to create the test paths for the intentional lane change tests where the turn signal is applied at 1.0s ± 0.5s before T_{STEER}:
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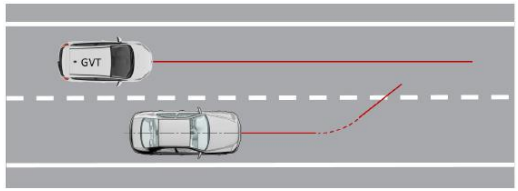
</table>
Where the lateral offset d from the lane marking:
d = d1 + d2 + Half of the vehicle width (m)
With:
d1: Lateral distance travelled during curve establishing yaw angle (m)
d2: Lateral distance travelled during V_{lat} steady state (m)


</td>
<td>驗車輛 @ 72km / h（相對速度為 8km / h）

3.12.6.2.4.4.5 應使用以下參數為刻意變換車道計算試驗路徑，其中在 T_{STEER} 之前以 1.0s ± 0.5s 啟動轉向警示:
<table>
<tr><th>側向速度,單位[m/s]</th><th>轉彎半徑[m]</th><th>試驗過程中單位[°]之橫擺角速度</th><th>橫擺角曲線建立時之側向偏離[m]</th><th>側向速度穩定狀態之側向偏離距離[m]</th></tr>
<tr><td>0.5</td><td rowspan="3">800</td><td>1.43</td><td>0.25</td><td>0.75</td></tr>
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<tr><td>0.7</td><td>2.01</td><td>0.49</td><td>0.53</td></tr>
</table>
車道標線的側向偏移量:
d = d1 + d2 +車輛寬度的一半(m)
以及:
d1:橫擺角曲線建立時之側向偏離距離（m）
d2:側向速度穩定狀態之側向偏離距離（m）
(請參末頁圖示)</td>
<td>驗車輛 @ 72km / h（相對速度為 8km / h）

3.12.6.2.4.3.5 應使用以下參數為刻意變換車道計算試驗路徑，其中在 T_{STEER} 之前以 1.0s ± 0.5s 啟動轉向警示:
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<tr><th>側向速度,單位[m/s]</th><th>轉彎半徑[m]</th><th>試驗過程中單位[°]之橫擺角速度</th><th>橫擺角曲線建立時之側向偏離[m]</th><th>側向速度穩定狀態之側向偏離距離[m]</th></tr>
<tr><td>0.5</td><td rowspan="3">800</td><td>1.43</td><td>0.25</td><td>0.75</td></tr>
<tr><td>0.6</td><td>1.72</td><td>0.36</td><td>0.60</td></tr>
<tr><td>0.7</td><td>2.01</td><td>0.49</td><td>0.53</td></tr>
</table>
車道標線的側向偏移量:
d = d1 + d2 +車輛寬度的一半(m)
以及:
d1:橫擺角曲線建立時之側向偏離距離（m）
d2:側向速度穩定狀態之側向偏離距離（m）
(請參末頁圖示)</td>
</tr>
</table>

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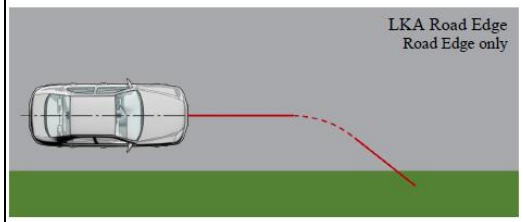
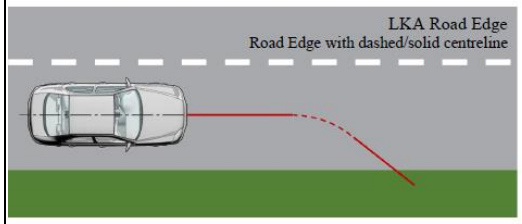
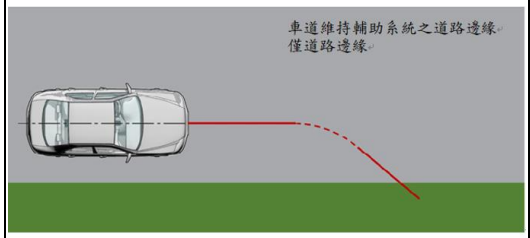
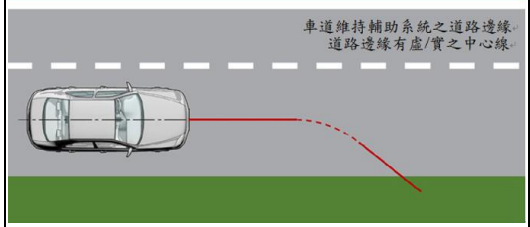
Figure 7-5: ELK Overtaking scenario			
7.2.5 Lane Keep Assist tests	7.2.5 Lane Keep Assist tests 7.2.5.1 Road Edge tests LKA Road Edge tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.5m/s for departures at the front passenger side only.  	3.12.6.2.5 車道維持輔助系統試驗	3.12.6.2.5 車道維持輔助系統試驗 3.12.6.2.5.1 道路邊緣試驗 道路邊緣試驗應於速度 0.2 至 0.5m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，僅適用於朝第一排乘客側之偏離。  
7.2.5.1 Dashed line tests LKA Dashed line tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.6m/s for departures at both sides of	7.2.5.2 Dashed line tests LKA Dashed line tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.5m/s for departures at both	3.12.6.2.5.1 虛線試驗 車道維持輔助系統之虛線試驗應於側向速度 0.2 至 0.6m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，適用於朝車輛兩側之偏離。	3.12.6.2.5.2 虛線試驗 車道維持輔助系統之虛線試驗應於側向速度 0.2 至 0.5m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，適用於朝車輛兩側之偏離。

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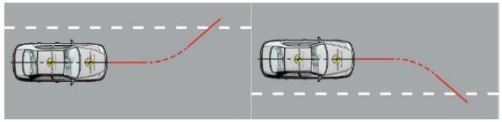
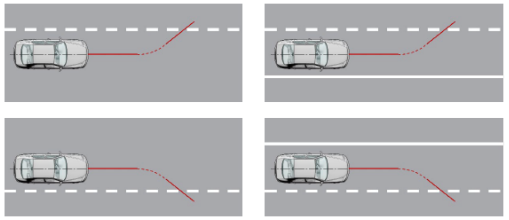
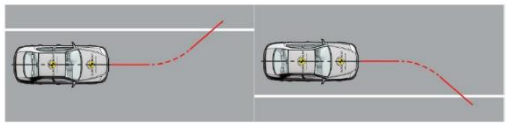
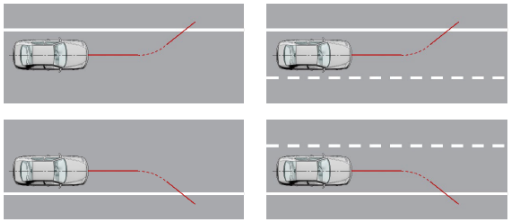
the vehicle.  Figure 7-6: LKA Dashed line scenarios	sides of the vehicle. 	(請參末頁圖示)	(請參末頁圖示)
7.2.5.2 Solid line tests LKA Solid line tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.6m/s for departures at both sides of the vehicle.  Figure 7-7: LKA solid line scenarios	7.2.5.3 Solid line tests LKA Solid line tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.5m/s for departures at both sides of the vehicle. 	3.12.6.2.5.2 實線試驗 車道維持輔助系統之實線試驗應於側向速度 0.2 至 0.6m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，適用於車輛兩側之偏離。 (請參末頁圖示)	3.12.6.2.5.3 實線試驗 車道維持輔助系統之實線試驗應於側向速度 0.2 至 0.5m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，適用於車輛兩側之偏離。 (請參末頁圖示)
7.2.6 Lane Departure Warning tests Perform the LKA single line tests within the lateral velocity range of 0.6 to 1.0m/s.	7.2.6 Lane Departure Warning tests In case of LDW only systems or systems where LDW can be used as a standalone function, perform the tests below. When combined with an LKA and/or ELK system, assess the LDW	3.12.6.2.6 車道偏離警示輔助系統試驗 在側向速度 0.6 至 1.0m/s 範圍，執行車道維持輔助系統之單側車道標線試驗。	3.12.6.2.6 車道偏離警示輔助系統試驗 若僅有車道偏離警示輔助系統或系統可以將車道偏離警示輔助作為獨立功能，則應執行以下試驗。當車道維持輔助系統及/或緊急車道維持輔助系統整合使用時，可併在車道維持

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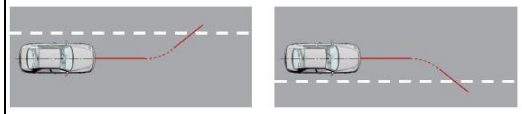
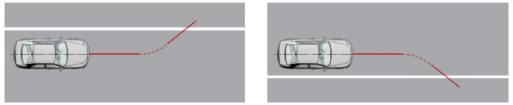
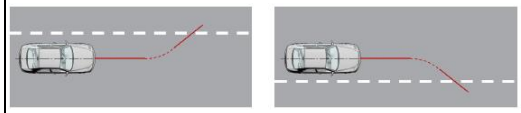
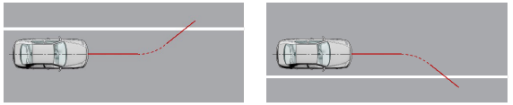
	performance during LKA or ELK testing, excluding the intentional overtaking scenario. 7.2.6.1 Dashed line tests LDW Dashed line tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.5m/s for departures at both sides of the vehicle.  7.2.6.2 Solid line tests LDW Solid line tests will be performed with 0.1 m/s incremental steps within the lateral velocity range of 0.2 to 0.5m/s for departures at both sides of the vehicle  …		輔助系統或緊急車道維持輔助系統試驗期間，評等車道偏離警示輔助系統性能，不包括刻意超車試驗情境。 3.12.6.2.6.1 虛線試驗 車道偏離警示輔助系統之虛線試驗應於側向速度 0.2 至 0.5m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，適用於朝車輛兩側之偏離。  3.12.6.2.6.2 實線試驗 車道偏離警示輔助系統之實線試驗應於向速度 0.2 至 0.5m/s 範圍內，以每次增加 0.1 m/s 側向速度進行，用於朝車輛兩側之偏離。  …
7.2.7 Blind-Spot Monitoring Tests		3.12.6.2.7 盲點偵測系統試驗	

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7.2.7.1 For the Blind Spot Monitoring scenario, the target vehicle will follow a straight-line path in the lane adjacent to the VUT's initial position in the same direction as the VUT. The straight-line path of the target will be 1.5m from the inner side of the centre dashed lane marking (Figure 7-8 Blind Spot Monitoring scenario). The VUT is positioned in the centre of the driving lane.		3.12.6.2.7.1 針對盲點偵測系統試驗情境，目標車輛應沿著與受驗車輛初始位置相鄰之車道直線路徑行駛，同受驗車輛行駛方向。目標車輛應距車道中虛線標線內側 1.5m（如圖 14 盲點偵測系統試驗情境），受驗車輛應位於行駛車道的中央位置。	
7.2.7.2 The tests should be repeated with the test target to both the nearside and farside of the VUT.		3.12.6.2.7.2 測試目標應分別置於受驗車輛之近側(nearside)及遠側(farside)重複進行試驗。	
7.2.7.3 The tests should be conducted with both the GVT and EMT (or a Real Motorcycle as an alternative test target).		3.12.6.2.7.3 應使用全球目標車及目標機車騎士（或用真實機車取代測試目標）執行試驗。	
7.2.7.4 The tests are conducted with a VUT speed of 72km/h and a target speed of 80km/h.		3.12.6.2.7.4 測試應以受驗車輛試驗速度 72 km/h 及目標車輛試驗速度 80 km/h 執行。 (請參末頁圖示)	

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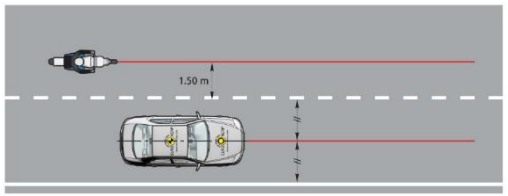 Figure 7-8 Blind-Spot Monitoring scenario … 7.3.3 For vehicles with a system where LKA dashed line is implemented as an ELK functionality (default-on) but not including a DIM feature, conduct the calibration runs as stated in 7.2.2.1 and monitor the steering torque at the intervention point for all the lateral velocities. The overriding torque shall be <= 3.5 Nm. …		… 3.12.6.3.3 針對車道維持輔助系統之虛線功能如同緊急車道維持輔助系統之功能（預設開啟），但不包含駕駛意圖監測系統之車輛，依 3.12.6.2.2.1 規範進行校準，並監測所有側向速度介入點之轉向扭力。凌駕扭力(Overriding torque)應小於等於 3.5 Nm。 …	
7.4.3 The test shall start at T0 and is valid when all boundary conditions are met between T0 and T_{LKA}/T_{LDW}: ELK Road Edge, LKA, LDW and BSM scenarios: - Speed of VUT (GPS-speed): 72 ±	7.4.3 The test shall start at T_0 and is valid when all boundary conditions are met between T_0 and T_{LKA}/T_{LDW}: ELK Road Edge, LKA and LDW scenarios: - Speed of VUT (GPS-speed) 72 ±	3.12.6.4.3 試驗於 T_0 開始，若 T_0 與 T_{LKA}/T_{LDW} 之間符合下列所有限制條件，則該次試驗認定有效: 緊急車道維持輔助系統之道路邊緣、車道維持輔助系統、車道偏離輔助警示系統以及盲點偵測系統情境試驗:	3.12.6.4.3 試驗於 T_0 開始，若 T_0 與 T_{LKA}/T_{LDW} 之間符合下列所有限制條件，則該次試驗認定有效: 緊急車道維持輔助系統之道路邊緣、車道維持輔助系統，以及車道偏離輔助警示系統情境試驗:

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1.0km/h - Lateral deviation from test path VUT: 0 ± 0.05m - Steady state lane departure lateral velocity: ± 0.05m/s - Yaw velocity of VUT (up to T_{STEER}): 0 ± 1.0 °/s - Steering wheel velocity (up to T_{STEER}): 0 ± 15.0°/s ELK oncoming scenarios: - Speed of GVT (GPS-speed) from 4s TTC:72 ± 1.0km/h - Lateral deviation from test path GVT:0 ± 0.30m … 7.4.5 The end of a BSM test is considered to be when the longitudinal distance between the VUT and test target is 0m (i.e. when the front end of the VUT is aligned with the rear end of the test target).	1.0km/h - Lateral deviation from test path VUT 0 ± 0.05m - Steady state lane departure lateral velocity ± 0.05m/s - Yaw velocity of VUT (up to T_{STEER}) 0 ± 1.0 °/s - Steering wheel velocity (up to T_{STEER}) 0 ± 15.0°/s ELK oncoming scenarios: - Speed of GVT (GPS-speed) 72 ± 1.0km/h - Lateral deviation from test path GVT 0 ± [0.30]m …	(1) 受驗車輛速度（GPS 速度）72 ± 1.0km/h (2) 受驗車輛行駛路徑側向偏移量 0 ± 0.05m (3) 穩定狀態之車道偏離側向速度 ±0.05m/s (4) 受驗車輛的橫擺角速度(取決於 T_{STEER}) 0 ± 1.0 °/s (5) 方向盤轉速(取決於 T_{STEER}) 0± 15.0°/s 緊急車道維持輔助系統之對向來車情境試 驗: (1) 從 TTC 4 秒開始之全球目標車速度（GPS 速度）72±1.0km/h (2) 全球目標車行駛路徑側向偏移量 0±0.30 m … 3.12.6.4.5 盲點偵測系統測試的試驗結束點，受驗車輛與測試目標之間的縱向距離為 0m 時（例:受驗車輛的前端與測試目標的後端對齊）。	(1) 受驗車輛速度（GPS 速度）72 ± 1.0km/h (2) 受驗車輛行駛路徑側向偏移量 0 ± 0.05m (3) 穩定狀態之車道偏離側向速度 ±0.05m/s (4) 受驗車輛的橫擺角速度(取決於 T_{STEER}) 0 ± 1.0 °/s (5) 方向盤轉速(取決於 T_{STEER}) 0± 15.0°/s 緊急車道維持輔助系統之對向來車情境試 驗: (1) 全球目標車速度（GPS 速度）72 ±1.0km/h (2) 全球目標車行駛路徑側向偏移量 0±0.30 m …

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7.4.6 The end of an LKA/ELK Road Edge test is considered complete 2 seconds after one of the following occurs: - The LKA/ELK system fails to maintain the VUT within the permitted lane departure distance. - The LKA/ELK system intervenes to maintain the VUT within permitted lane departure distance, such that a maximum lateral position is achieved that subsequently diminishes causing the VUT to turn back towards the lane.	7.4.5 The end of an LKA/ELK Road Edge test is considered complete 2 seconds after one of the following occurs: - The LKA/ELK system fails to maintain the VUT within the permitted lane departure distance. - The LKA/ELK system intervenes to maintain the VUT within permitted lane departure distance, such that a maximum lateral position is achieved that subsequently diminishes causing the VUT to turn back towards the lane.	3.12.6.4.6 車道維持輔助/緊急車道維持輔助系統之道路邊緣系統試驗結束時機點，為下述任一情況發生 2 秒後： (1) 車道維持輔助/緊急車道維持輔助系統並未讓受驗車輛維持在允許之車道偏離距離內。 (2) 車道維持輔助/緊急車道維持輔助系統介入，將受驗車輛維持在允許之車道偏離距離內，例如在達到最大側向位置後修正回到原車道內。	3.12.6.4.5 車道維持輔助/緊急車道維持輔助系統之道路邊緣系統試驗結束時機點，為下述任一情況發生 2 秒後： (1) 車道維持輔助/緊急車道維持輔助系統並未讓受驗車輛維持在允許之車道偏離距離內。 (2) 車道維持輔助/緊急車道維持輔助系統介入，將受驗車輛維持在允許之車道偏離距離內，例如在達到最大側向位置後修正回到原車道內。
7.4.7 The end of an ELK oncoming or overtaking test is considered as when one of the following occurs: - The ELK system intervenes to prevent a collision between the VUT and target vehicle - The ELK system has failed to intervene (sufficiently) to prevent a collision between the VUT and target vehicle. This can be assumed when	7.4.6 The end of an ELK oncoming or overtaking test is considered as when one of the following occurs: - The ELK system intervenes to prevent a collision between the VUT and target vehicle - The ELK system has failed to intervene (sufficiently) to prevent a collision between the VUT and target vehicle. This can be assumed when	3.12.6.4.7 緊急車道維持輔助系統之對向來車或車道超車試驗結束時機點，為下述任一情況時： (1) 緊急車道維持輔助系統介入以避免受驗車輛與全球目標車發生碰撞。 (2) 緊急車道維持輔助系統未能(充分)介入以避免受驗車輛與全球目標車發生碰撞。可假設以下任一情況發生時：	3.12.6.4.6 緊急車道維持輔助系統之對向來車或車道超車試驗結束時機點，為下述任一情況時： (1) 緊急車道維持輔助系統介入以避免受驗車輛與全球目標車發生碰撞。 (2) 緊急車道維持輔助系統介入(足夠地)避免受驗車輛與全球目標車發生碰撞失敗。可假設以下任一情況發生時：

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one of the following occurs: ○ The lateral separation between the VUT and target vehicle equal < 0.3m in the oncoming and overtaking scenario ○ No intervention is observed at a TTC = 0.8s or a TTC submitted by the OEM It is at the labs discretion to select and use one of the options above to ensure a safe testing environment.	one of the following occurs: ○The lateral separation between the VUT and target vehicle equal < 0.3m in the oncoming and overtaking scenario ○ No intervention is observed at a TTC = 0.8s or a TTC submitted by the OEM It is at the labs discretion to select and use one of the options above to ensure a safe testing environment.	(A) 對向來車及車道超車情境試驗下，受驗車輛與全球目標車之間的側向間距等於小於 0.3m。 (B) TTC 等於 0.8s 或由車輛業者提供之 TTC，未偵測系統介入。 檢測機構依試驗結果選擇並使用上述任一選項以確保安全的試驗環境。	(A) 對向來車及車道超車情境試驗下，受驗車輛與全球目標車之間的側向間距等於小於 0.3m。 (B) TTC 等於 0.8s 或由車輛業者提供之 TTC，未偵測系統介入。 檢測機構依試驗結果選擇並使用上述任一選項以確保安全的試驗環境。
7.4.7.1 If the test ends because the vehicle has failed to intervene (sufficiently) or if the GVT has left its designated path by more than 0.2m, it is recommended that the VUT and/or GVT are steered away from the impact, either manually or by reactivating the steering control of the driving robot/GVT.	7.4.6.1 If the test ends because the vehicle has failed to intervene (sufficiently) or if the GVT has left it's designated path by more than 0.2m, it is recommended that the VUT and/or GVT are steered away from the impact, either manually or by reactivating the steering control of the driving robot/GVT.	3.12.6.4.7.1 若試驗結束是因為車輛介入失敗（足夠地）或全球目標車已偏離其指定路徑超過 0.2m，則建議將受驗車輛及/或全球目標車調整轉向以避免發生碰撞，可手動或藉由重新預設駕駛機器人/ 全球目標車之轉向控制達成。	3.12.6.4.6.1 若試驗結束是因為車輛介入失敗（足夠地）或全球目標車已偏離其指定路徑超過 0.2m，則建議將受驗車輛及/或全球目標車調整轉向以避免發生碰撞，可手動或藉由重新預設駕駛機器人/ 全球目標車之轉向控制達成。
7.4.8 The subsequent lateral velocity for the next test is incremented with 0.1m/s.	7.4.7 The subsequent lateral velocity for the next test is incremented with 0.1m/s.	3.12.6.4.8 下一次試驗之側向速度應增加 0.1m/s。	3.12.6.4.7 下一次試驗之側向速度應增加 0.1m/s。

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ANNEX A: EURO NCAP TEST FACILITIES Real Road Edges are to be used for Euro NCAP tests until an agreed artificial road edge for testing purpose is available. **A.1 Road Edges at the Euro NCAP laboratories** 		3.12.7 TNCAP 試驗設施 3.12.7.1 TNCAP 檢測機構之道路邊緣  	

修正後

7.2.3

Vlat,VUT [m/s]	**R [m]**	**ΨVUT [°]**	**d1 [m]**	**d2 [m]**
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80
0.5		1.43	0.38	0.75
0.6		1.72	0.54	0.60
0.7		2.01	0.74	0.53
0.8		2.29	0.96	0.40
0.9		2.58	1.22	0.23
1.0		2.87	1.50	0.00

3.12.6.2.3

側向速度,受驗車輛 [m/s]	**轉彎半徑 [m]**	**試驗過程中受驗車輛之橫擺角速度[°]**	**橫擺角曲線建立時之側向偏離距離 [m]**	**側向速度穩定狀態之側向偏離距離 [m]**
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80
0.5		1.43	0.38	0.75
0.6		1.72	0.54	0.60
0.7		2.01	0.74	0.53

修正前

7.2.3

Vlat,VUT [m/s]	**R [m]**	**ΨVUT [°]**	**d1 [m]**	**d2 [m]**
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80
0.5		1.43	0.38	0.75
0.6		1.72	0.54	0.60

3.12.6.2.3

側向速度,受驗車輛 [m/s]	**轉彎半徑 [m]**	**試驗過程中受驗車輛之橫擺角速度[°]**	**橫擺角曲線建立時之側向偏離[m]**	**側向速度穩定狀態之側向偏離距離 [m]**
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80
0.5		1.43	0.38	0.75
0.6		1.72	0.54	0.60

修正後	修正前

0.8		2.29	0.96	0.40
0.9		2.58	1.22	0.23
1.0		2.87	1.50	0.00

7.2.3

Vlat,VUT [m/s]	**R [m]**	**ΨVUT [°]**	**d1 [m]**	**d2 [m]**
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80
0.5	800	1.43	0.25	1.00
0.6		1.72	0.36	1.20
0.7		2.01	0.49	1.40
0.8		2.29	0.64	1.60
0.9		2.58	0.81	1.80
1.0		2.87	1.00	2.00

3.12.6.2.3

側向速度,受驗車輛 [m/s]	**轉彎半徑 [m]**	**試驗過程中受驗車輛之橫擺角速度[°]**	**橫擺角曲線建立時之側向偏離距離 [m]**	**側向速度穩定狀態之側向偏離距離 [m]**
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80

修正後					修正前
0.5	800	1.43	0.25	1.00	
0.6		1.72	0.36	1.20	
0.7		2.01	0.49	1.40	
0.8		2.29	0.64	1.60	
0.9		2.58	0.81	1.80	
1.0		2.87	1.00	2.00	

7.2.3

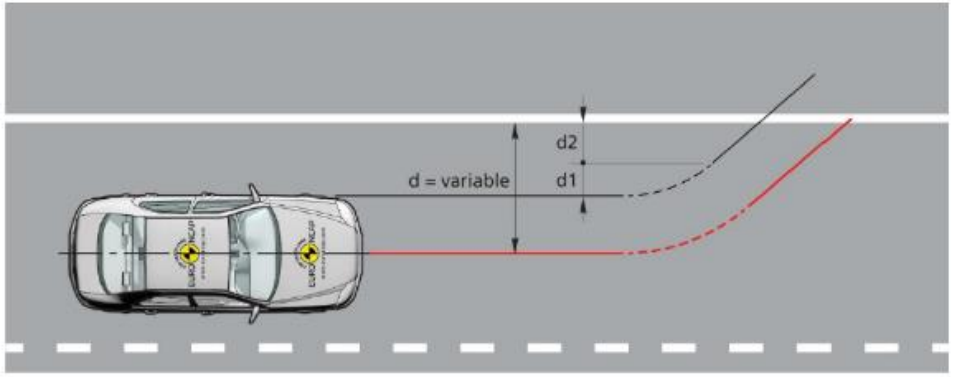
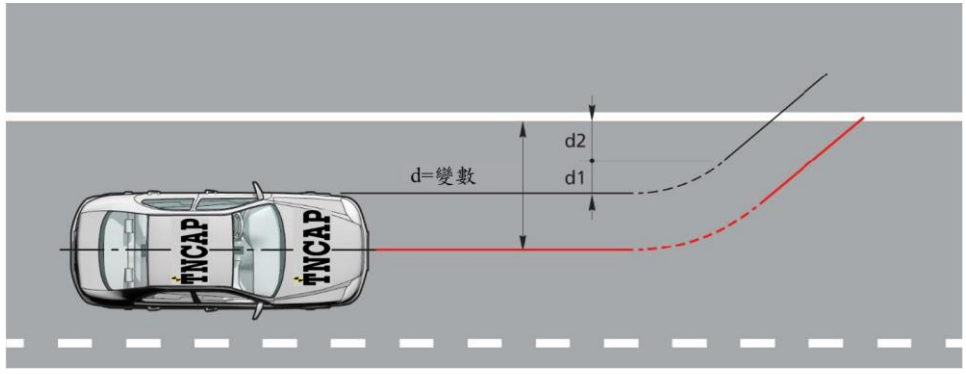
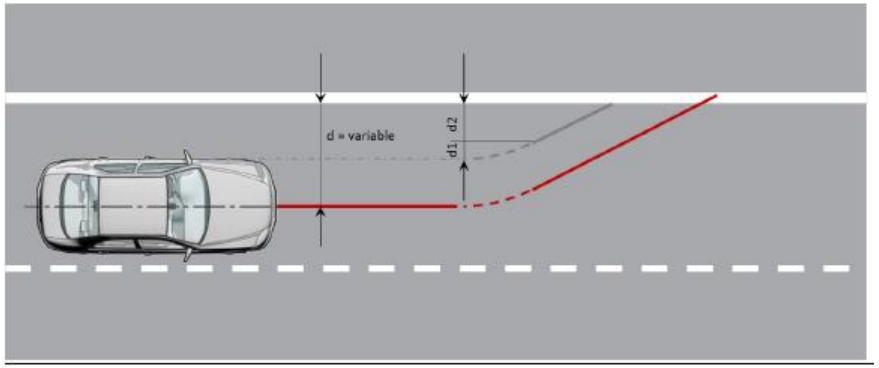


Figure 7-1：Vehicle paths definition

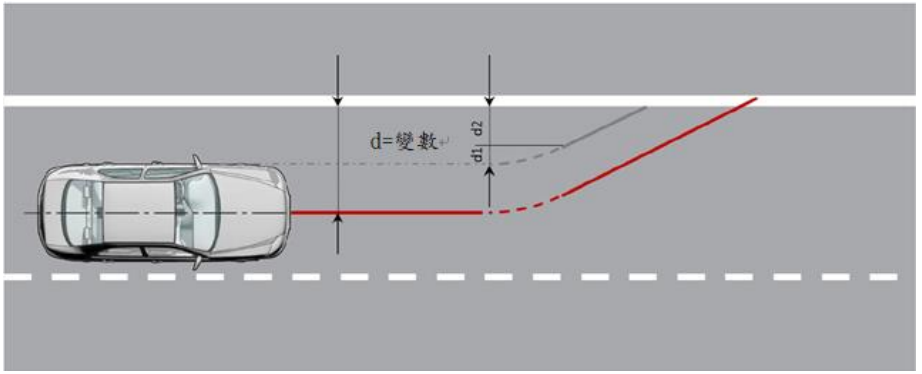
3.12.6.2.3

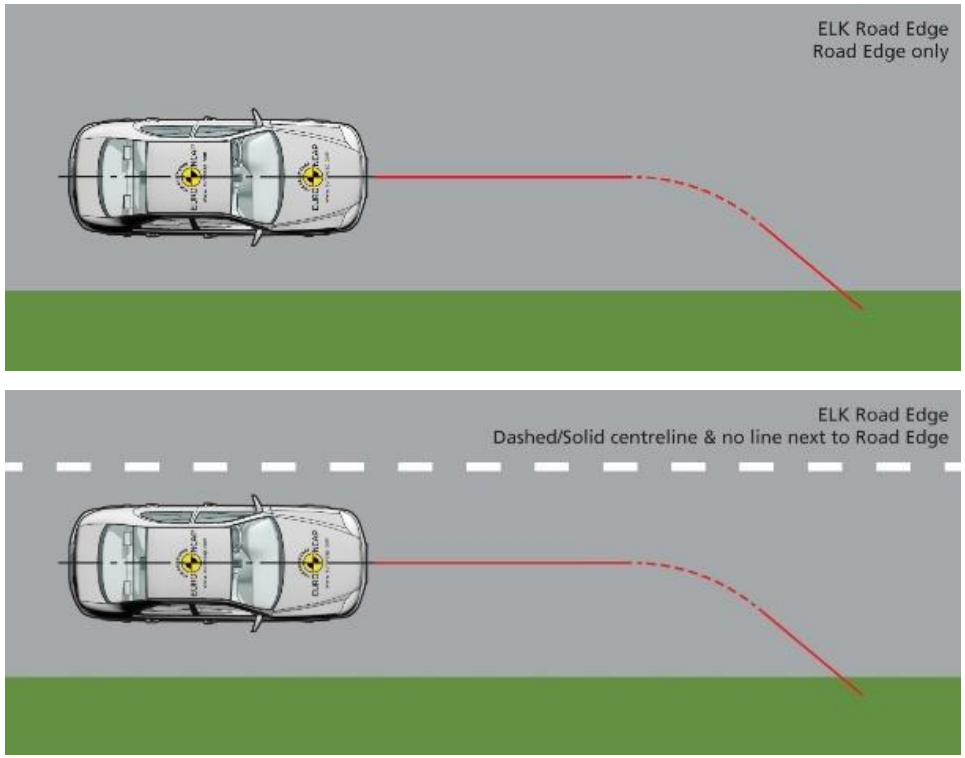
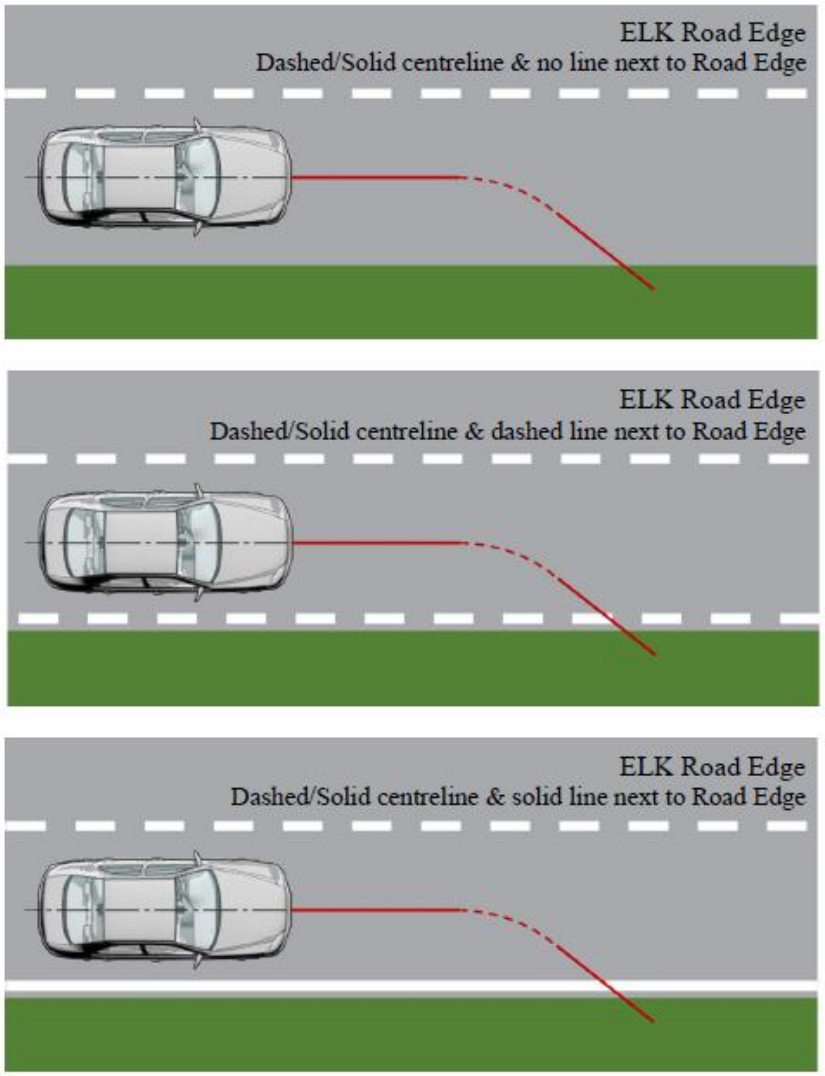


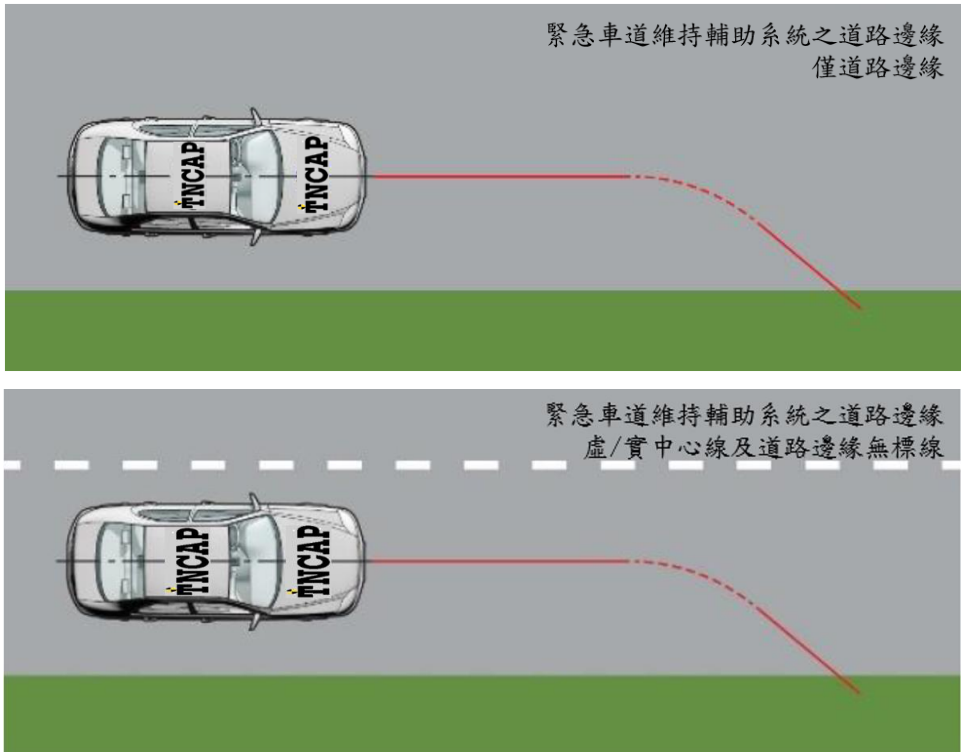
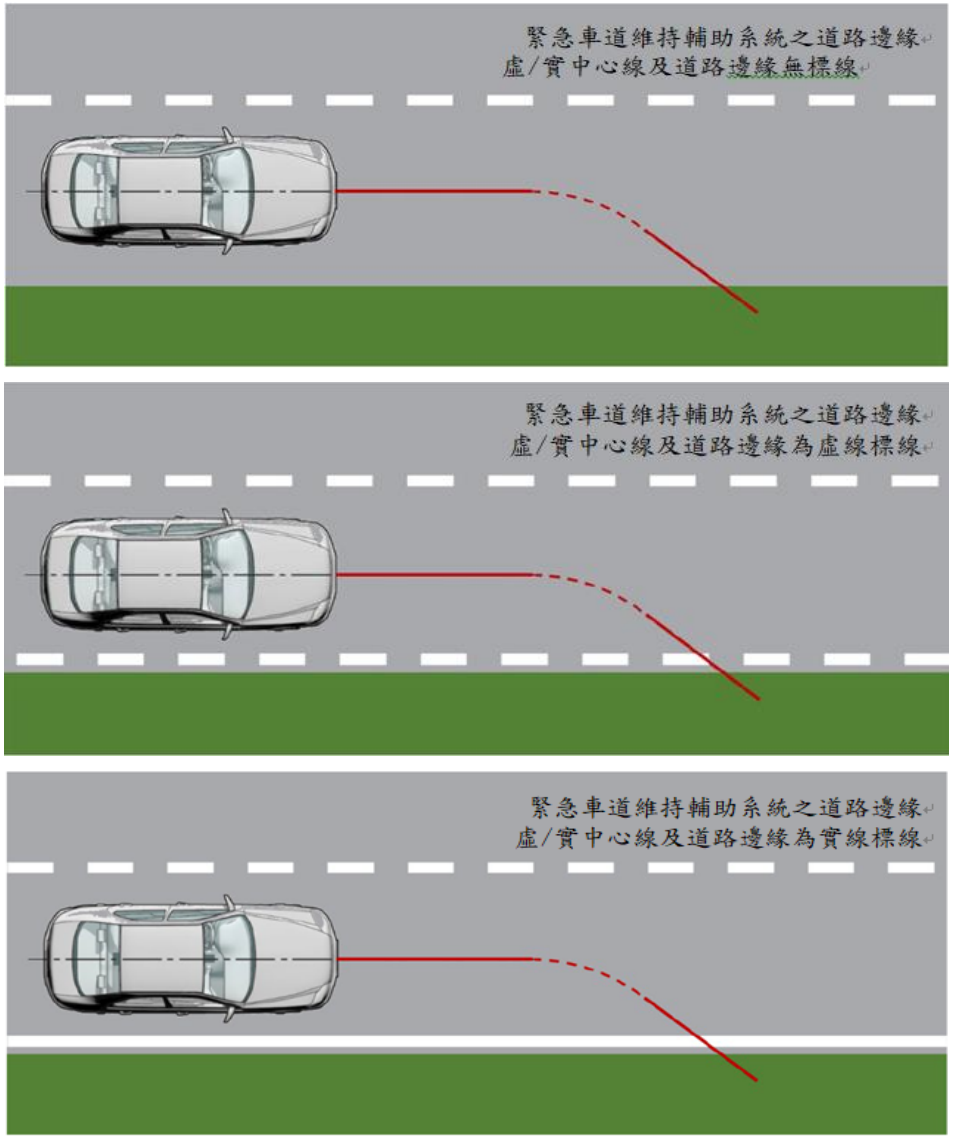
7.2.3

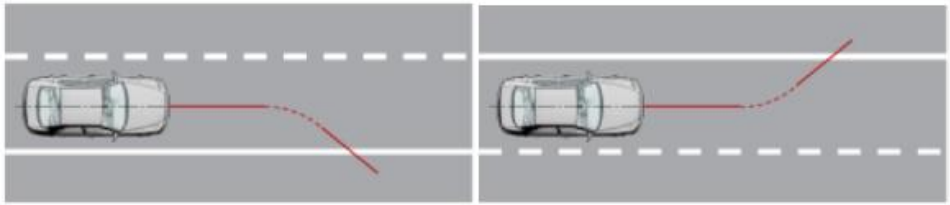
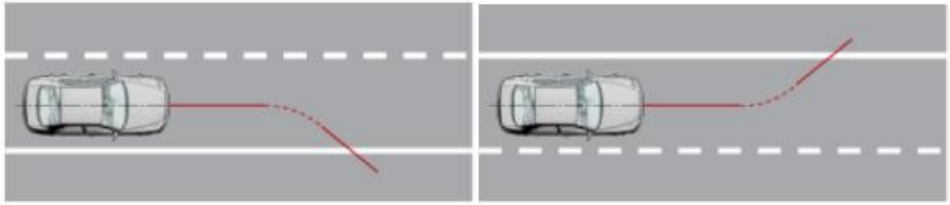
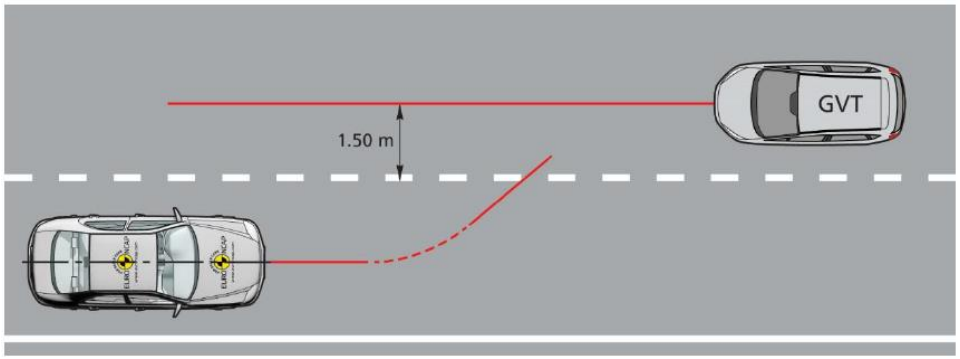
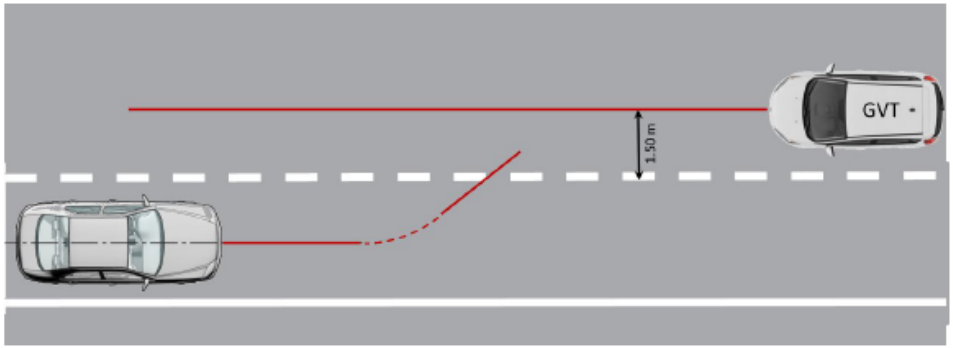


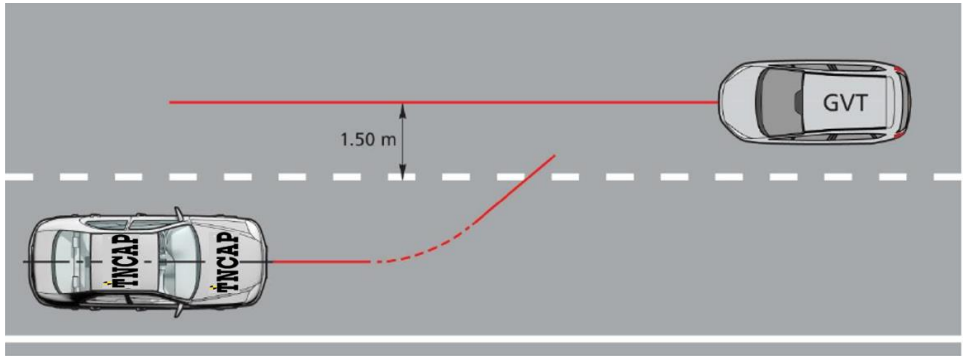
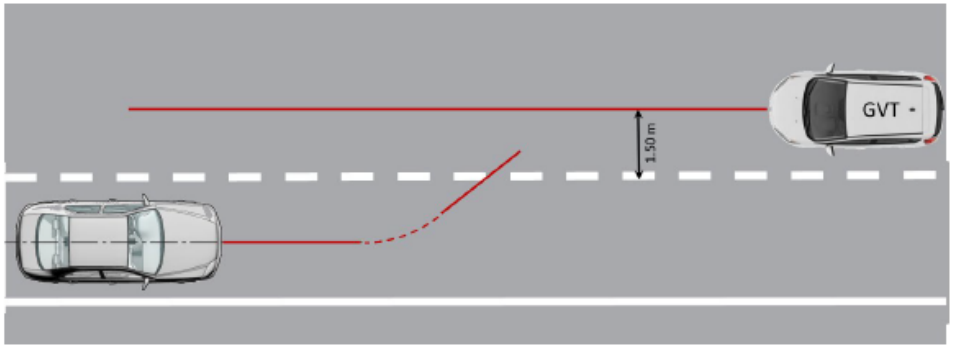
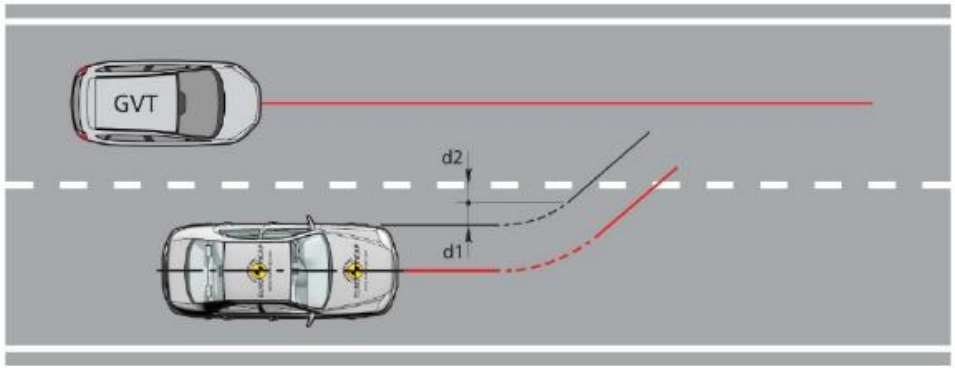
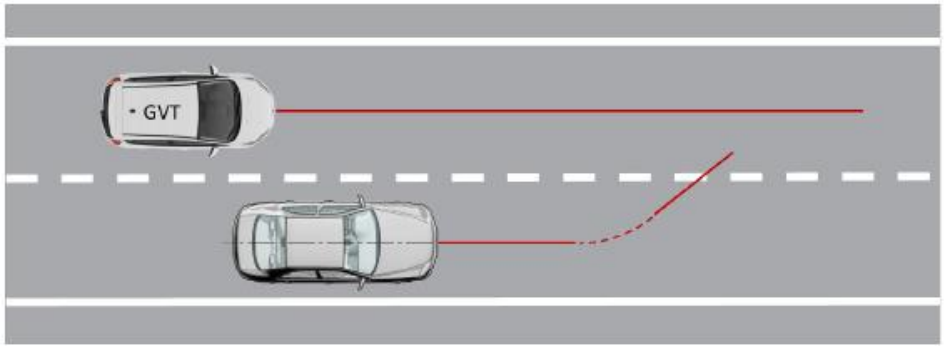
3.12.6.2.3



修正後	修正前
圖7：車輛路徑	
7.2.4.1  Figure 7-2：ELK Road Edge scenarios	7.2.4.1 

修正後	修正前
3.12.6.2.4.1  圖8：緊急車道維持輔助系統之道路邊緣試驗情境	3.12.6.2.4.1 

修正後	修正前
7.2.4.2  Figure 7-3：ELK Solid Line scenarios 3.12.6.2.4.2  圖9：緊急車道維持輔助系統之實線試驗情境	
7.2.4.3.2  Figure 7-4：ELK Oncoming vehicle scenario paths	7.2.4.2.2 

修正後	修正前
3.12.6.2.4.3.2  圖10：緊急車道維持輔助系統之對向來車試驗情境	3.12.6.2.4.2.2 
7.2.4.4.5  Figure 7-5：ELK Overtaking scenario	7.2.4.3.4 

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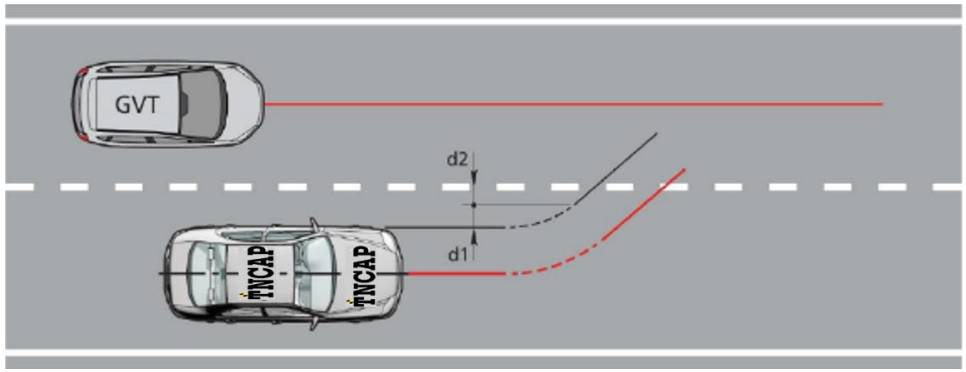
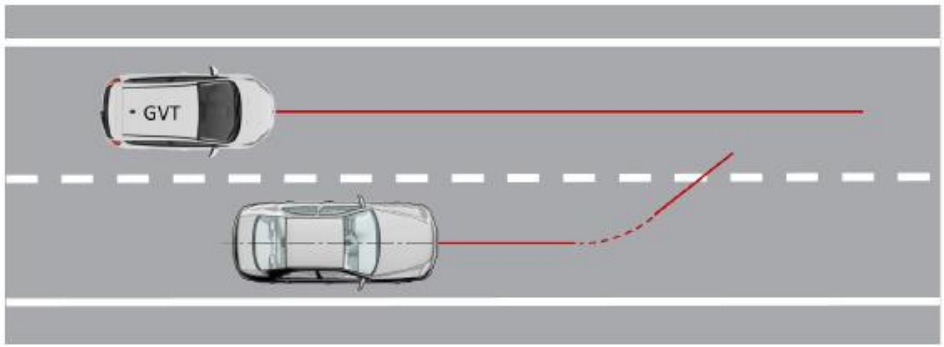
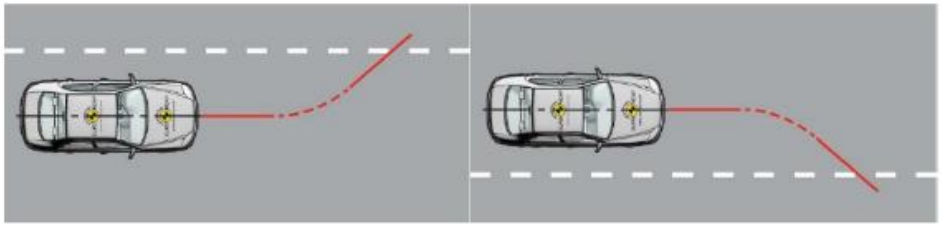
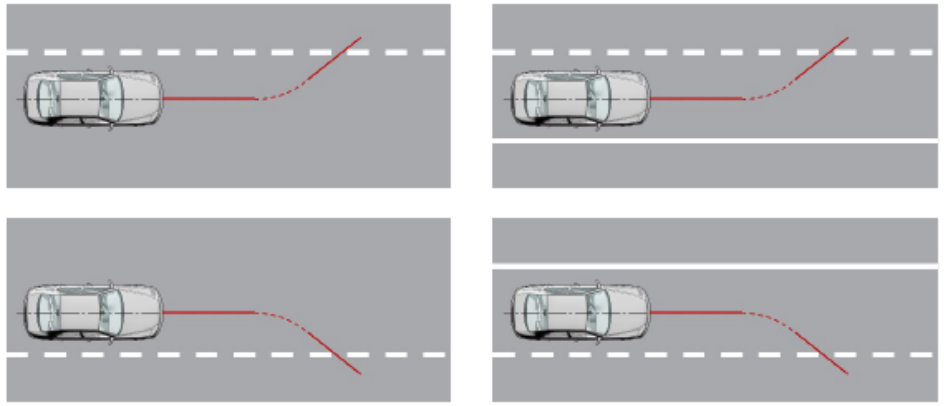
3.12.6.2.4.4.5  圖11：緊急車道維持輔助系統之車道超車試驗情境	3.12.6.2.4.3.5 
7.2.5.1  Figure 7-6：LKA Dashed line scenarios	7.2.5.2 

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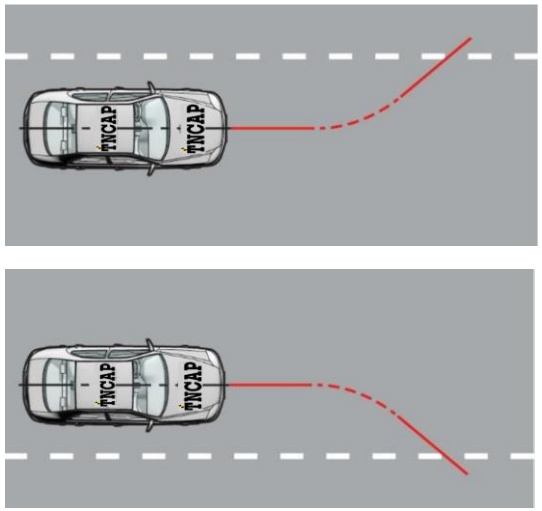
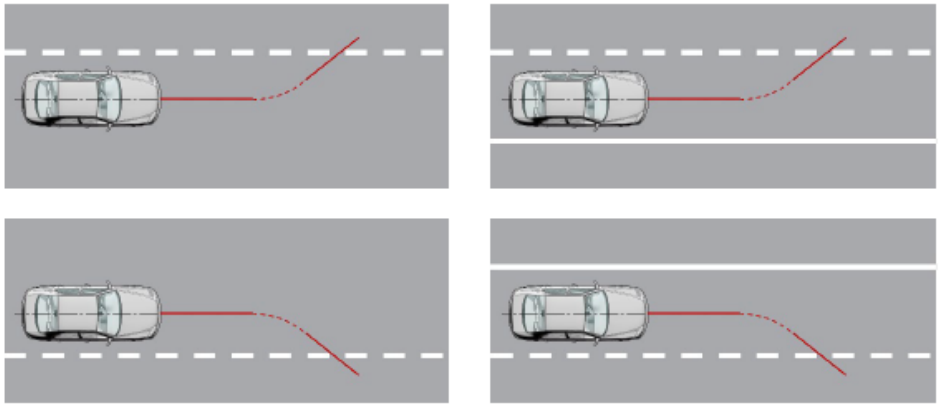
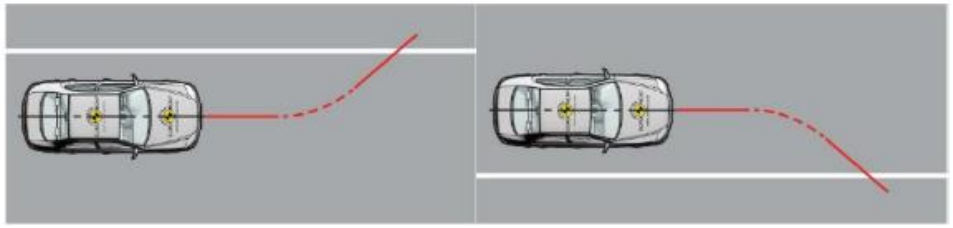
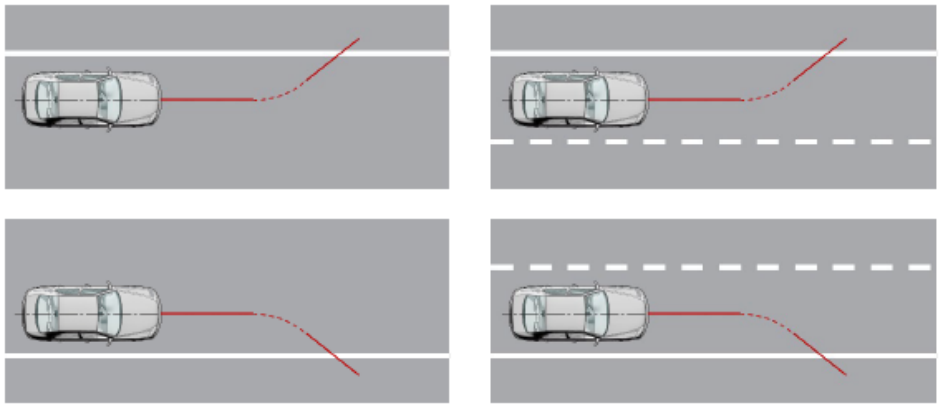
3.12.6.2.5.1  圖12：車道維持輔助系統之虛線試驗情境	3.12.6.2.5.2 
7.2.5.2  Figure 7-7：LKA solid line scenarios	7.2.5.3 

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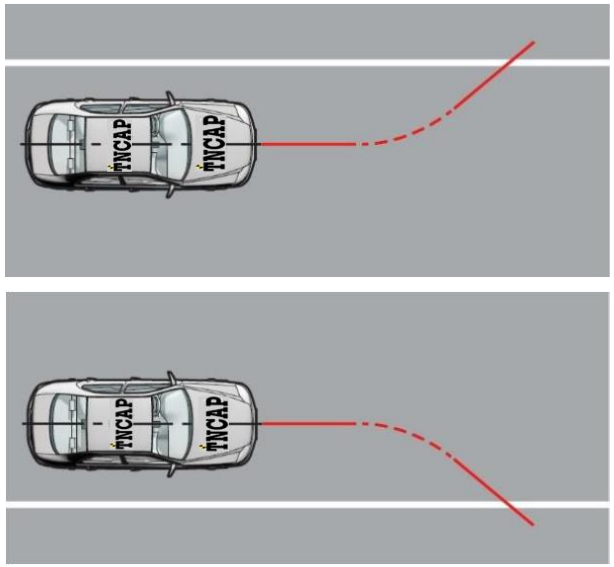
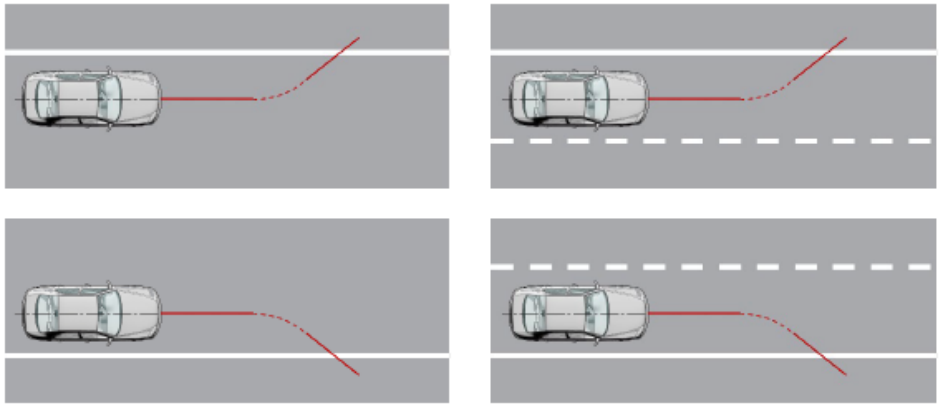
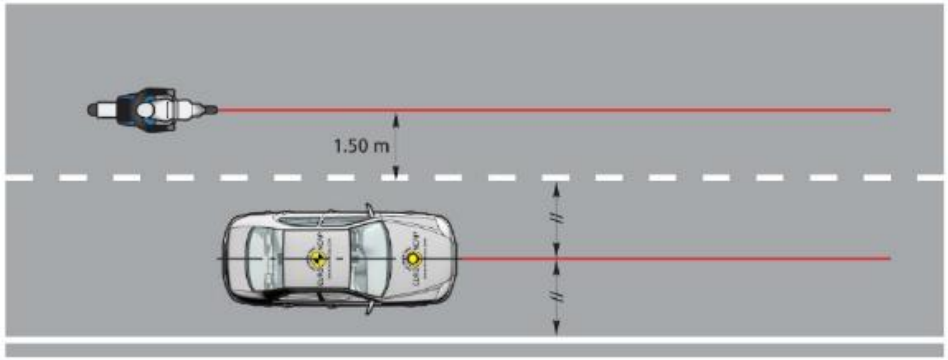
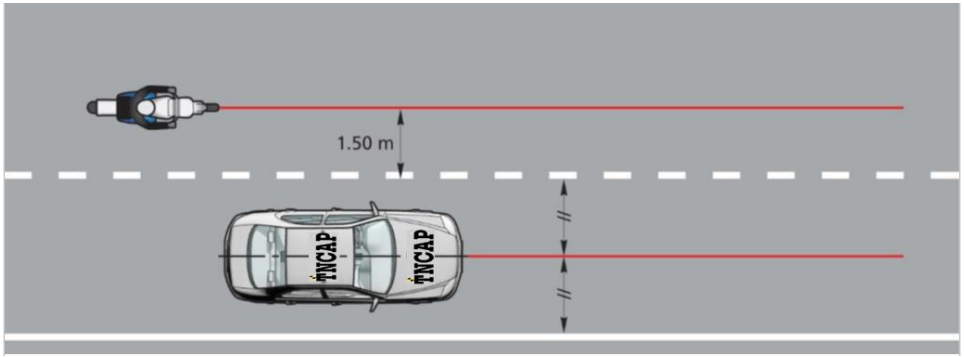
3.12.6.2.5.2  圖13：車道維持輔助系統之實線試驗情境	3.12.6.2.5.3 
7.2.7.4  Figure 7-8 Blind-Spot Monitoring scenario	

修正後	修正前
3.12.6.2.7.4  圖14：盲點偵測系統試驗情境	

2.4安全輔助評等規章-2.4.4車道輔助系統評等 **<<本案暫以2.4規章編號說明車道輔助系統試驗評等條文修訂內容，後續擬修訂至2.2碰撞預防評等規章 >>**

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4 ASSESSMENT OF LANE SUPPORT SYSTEMS … **Driver Intention Monitoring system (DIM)** - means a system that is effective at distinguishing intentional from unintentional lane crossing and suppressing undesired interventions. **4.3 Criteria and Scoring** … 4.3.1 Human Machine Interface (HMI) A maximum of 0.50 HMI points can be achieved for one of the following: **Lane Departure Warning 0.50 points** Any LDW system that issues a haptic warning clearly relating to the lateral control of the vehicle noticeable by the driver (e.g. notable heading correction, steering wheel vibration, etc.) before a	**6 ASSESSMENT OF LANE SUPPORT SYSTEMS** … **6.3 Criteria and Scoring** … 6.3.2 Human Machine Interface (HMI) HMI points can be achieved for the following: **•Lane Departure Warning 0.25 points** Any LDW system that issues an audible and/or haptic warning before a DTLC of -0.2m is awarded. Where an LKA system fulfils the requirements of all the single line marking tests, the	2.4.4 車道輔助系統評等 … 2.4.4.1.8 駕駛意圖監測系統（Driver Intention Monitoring system, DIM）：係指系統能有效區分駕駛是否為刻意與非刻意之車道穿越，並抑制非必要之介入。 2.4.4.2 標準與得分 … 2.4.4.2.2 人機介面 人機介面之最高得分為 0.50 分，得分規範如下： (1) 車道偏離輔助警示系統 0.50 分 所有車道偏離輔助警示系統，在車道邊緣剩餘距離為-0.2m 之前，應發出能使駕駛明顯注意到之觸覺警示(例:明顯方向修正、方向盤震動等)，且該功能可於至少 1m/s 側向	2.4.4 車道輔助系統評等 … 2.4.4.2 標準與得分 … 2.4.4.2.2 人機介面 人機介面之得分規範如下： (1) 車道偏離輔助警示系統 0.25 分 所有車道偏離輔助警示系統，在車道邊緣剩餘距離為-0.2m 之前應發出聽覺及/或觸覺警示，即可獲得分數。若車道維持輔助系統符合所有單側車道標線試驗，則將自動獲得

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DTLE of -0.2m is awarded when active at lateral velocities up to at least 1m/s. **Blind Spot Monitoring 0.50 points** The vehicle is additionally equipped with a Blind Spot Monitoring system on both sides of the vehicle to warn the driver of other vehicles present in the blind spot.	LDW points are awarded automatically. •**Blind Spot Monitoring 0.25 points** The vehicle is additionally equipped with a Blind Spot Monitoring system to warn the driver of other vehicles present in the blind spot. Where the vehicle is fitted with an ELK system fulfilling the requirements of the overtaking tests, the BSM points are awarded automatically.	速度下作動。 (2) 盲點偵測系統 0.50 分 車輛額外於車輛兩側配備之盲點偵測系統，用以警示駕駛已有其他車輛進入至駕駛視線之盲點區。	車道偏離輔助警示系統之分數。 (2) 盲點偵測系統 0.25 分 車輛額外配備之盲點偵測系統，用以警示 駕駛已有其他車輛進入至駕駛視線之盲點區。若車輛配備符合緊急車道維持輔助系統之車道超車試驗，則自動獲得盲點偵測系統之分數。
4.3.1.1 Blind spot monitoring For the Blind spot monitoring tests, the assessment criteria used is the blind spot information supplied in respect to the test target position. For a pass to be awarded visual blind spot information must be provided continuously when the front end of the test target is within the red areas shown in red in the following diagram (NOTE: to avoid a collision, the virtual box around the test target shall never exceed D):		2.4.4.2.2.1 盲點偵測系統 盲點偵測系統試驗，其評等標準係依試驗目標位置提供之盲點資訊。 為獲得分數，試驗目標前端位於下圖紅色區域內時，應提供連續的視覺盲點資訊 (註：為避免碰撞，試驗目標周圍之虛擬正方形區域應不得超過線段 D)：	

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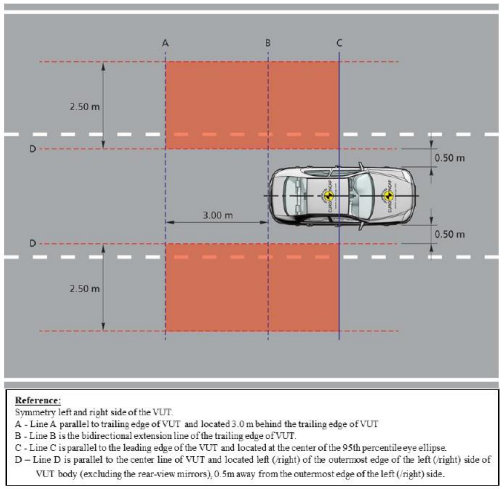 **Reference:** Symmetry left and right side of the VUT. A - Line A parallel to trailing edge of VUT and located 3.0 m behind the trailing edge of VUT B - Line B is the bidirectional extension line of the trailing edge of VUT. C – Line C is parallel to the leading edge of the VUT and located at the center of the 95th percentile eye ellipse. D – Line D is parallel to the center line of VUT and located left (/right) of the outermost edge of the left (/right) side of VUT body (excluding the rear-view mirrors), 0.5m away from the outermost edge of the left (/right) side. **Figure 4-1 Blind spot monitoring scenario assessment**		(請參末頁圖示)	
4.3.2 Lane Keep Assist (LKA)	6.3.3 Lane Keep Assist (LKA)	2.4.4.2.3 車道維持輔助系統	2.4.4.2.3 車道維持輔助系統
…	…	…	…
	6.3.3.3 The limit value for DTLE for LKA Road Edge tests is set to -0.1m for testing against the road edge, meaning that the LKA system only allows the VUT to have a part of the front wheel outside of the road edge.		2.4.4.2.3.3 車道維持輔助系統之道路邊緣試驗之試驗路徑，車道邊緣剩餘距離限值則為-0.1m，意即車道維持輔助系統僅允許受驗車輛將前輪的一部分超出道路邊緣之外。
The available points per test are awarded based on a pass/fail basis where all tests within the scenario and	6.3.3.4 The available points per test are awarded based on a pass/fail basis where all tests within the scenario and	2.4.4.2.3.3 每項試驗之得分以通過/未通過作判定;其中所有試驗情境及道路標線之組合都應符合，不同車道維	2.4.4.2.3.4 每項試驗之得分以通過/未通過作判定;其中所有試驗情境及道路標線之組合都應符合，不同車道維

<table>
<tr><th>2025 年版 Euro NCAP 規章</th><th>2019 年版 Euro NCAP 規章</th><th>修訂 TNCAP 條文草案(第三版)</th><th>對應 TNCAP 第二版規章</th></tr>
<tr><td>road marking combination need to be a pass. The points available for the different LKA scenario and road marking combinations are detailed in the table below:
<table><tr><th>LKA Scenario</th><th>Road Marking</th><th>Points</th></tr><tr><td>Dashed Line</td><td>Single lane marking</td><td>0.25</td></tr><tr><td>Solid Line</td><td>Single lane marking</td><td>0.25</td></tr><tr><td colspan="2">Total</td><td>0.50</td></tr></table></td><td>road marking combination need to be a pass. The points available for the different LKA scenario and road marking combinations are detailed in the table below:
<table><tr><th>LKA Scenario</th><th>Road marking</th><th>Points</th></tr><tr><td>Road Edge</td><td>Road Edge only</td><td>0.25</td></tr><tr><td></td><td>Road Edge with central lane marking</td><td>0.25</td></tr><tr><td>Dashed Line</td><td>Single lane marking</td><td>0.25</td></tr><tr><td></td><td>Fully marked lane</td><td>0.50</td></tr><tr><td>Solid line</td><td>Single lane marking</td><td>0.25</td></tr><tr><td></td><td>Fully marked lane</td><td>0.50</td></tr><tr><td>TOTAL</td><td></td><td>2.00</td></tr></table></td><td>持輔助系統試驗情境及道路標線組合之得分條件如下表所示：
(請參末頁表格)</td><td>持輔助系統試驗情境及道路標線組合之得分條件如下表所示：
(請參末頁表格)</td></tr>
<tr><td>4.3.3 Emergency Lane Keeping (ELK)</td><td>6.3.4 Emergency Lane Keeping (ELK)</td><td>2.4.4.2.4 緊急車道維持輔助系統</td><td>2.4.4.2.4 緊急車道維持輔助系統</td></tr>
<tr><td>4.3.3.1 To be eligible for scoring points in ELK, the ELK part of the LSS system needs to be default ON at the start of every journey and deactivation of the system should not be possible with a momentary single push on a button.</td><td>6.3.4.1 From 2020 onwards, to be eligible for scoring points in ELK, the ELK part of the LSS system needs to be default ON at the start of every journey and deactivation of the system should not be possible with a single push on a button.</td><td>2.4.4.2.4.1 車道輔助系統之緊急車道維持輔助系統，若於每次啟動車輛時，預設狀態為「開啟」且其設計應無法僅按短暫(momentary)一鍵即關閉，即可從緊急車道維持輔助系統試驗中得分。</td><td>2.4.4.2.4.1 車道輔助系統之緊急車道維持輔助系統，若於每次啟動車輛時，預設狀態為「開啟」且其設計無法僅按一鍵即關閉，即可從緊急車道維持輔助系統試驗中得分。</td></tr>
<tr><td>4.3.3.2 For ELK Road Edge and Solid line tests, the assessment criteria used is the Distance to Lane Edge (DTLE).</td><td>6.3.4.2 For ELK Road Edge tests, the assessment criteria used is the Distance to Lane Edge (DTLE).</td><td>2.4.4.2.4.2 緊急車道維持輔助系統之道路邊緣與實線試驗，使用的評等標準為車道邊緣剩餘距離。</td><td>2.4.4.2.4.2 緊急車道維持輔助系統之道路邊緣試驗，使用的評等標準為車道邊緣剩餘距離。</td></tr>
<tr><td>4.3.3.3 The limit value for DTLE for ELK Road Edge tests is set to -0.1m,</td><td>The limit value for DTLE for ELK Road Edge tests is set to -0.1m,</td><td>2.4.4.2.4.3 緊急車道維持輔助系統之道路邊緣試驗，車道邊緣剩餘距離限</td><td>緊急車道維持輔助系統之道路邊緣試驗，車道邊緣剩餘距離限值則為-</td></tr>
</table>

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meaning that the vehicle is only allowed to have a part of the front wheel outside of the road edge. The limit value for DTLE for ELK Solid line tests is set to -0.3m for testing against lines, meaning that the ELK system must not permit the VUT to cross the inner edge of the lane marking by a distance greater than 0.3m.	meaning that the vehicle is only allowed to have a part of the front wheel outside of the road edge.	值則為-0.1m，意即受驗車輛僅允許將前輪的一部分超出道路邊緣之外。緊急車道維持輔助系統之實線試驗，車道邊緣剩餘距離限值則為-0.3m，意即受驗車輛最多可越過車道邊界標線內緣 0.3m 前應作動。	0.1m，意即受驗車輛僅允許將前輪的一部分超出道路邊緣之外。
4.3.3.4 For ELK tests with oncoming and overtaking vehicles, the assessment criteria used is “no impact”, meaning that the VUT is not allowed to contact the overtaking or oncoming vehicle target at any time during the test. The points for ELK Oncoming and ELK Overtaking Unintentional may be achieved using a system where LKA dashed line is implemented as an ELK functionality (default-on) and the LKA dashed line tests fulfils all	6.3.4.3 For ELK tests with oncoming and overtaking vehicles, the assessment criteria used is no impact, meaning that the VUT is not allowed to contact the overtaking or oncoming vehicle target at any time during the test.	2.4.4.2.4.4 針對緊急車道維持輔助系統之對向來車與車道超車試驗，使用的評等標準為無碰撞，意即受驗車輛不允許在試驗期間內與車道超車或對向來車之目標車發生碰撞。 緊急車道維持輔助系統之對向來車與非刻意車道超車之得分，可透過將車道維持輔助系統之虛線功能作為緊急車道維持輔助系統功能（預設開啟）來達成，且車道維持輔助系統之虛線試驗須符合所有車道維持輔助	2.4.4.2.4.3 針對緊急車道維持輔助系統之對向來車與車道超車試驗，使用的評等標準為無碰撞，意即受驗車輛不允許在試驗期間內與車道超車或對向來車之目標車發生碰撞。

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LKA dashed lane criteria, provided that either: •The system features a Driver Intention Monitoring (DIM) with subsequent suppression of undesired intervention, OR •The steering torque applied by the driver to override the system is <=3.5 Nm For both cases, the OEM shall provide a dossier that includes a system overview and compelling evidence demonstrating how the system is effective at eliminating or mitigating driver acceptance issues associated with lateral control. For DIM, specific provisions for the dossier are outlined in 4.3.3.5. 4.3.3.5 For the evaluation of Driver Intention Monitoring (DIM) system, Euro NCAP requires a dossier from the OEM containing a detailed		系統之虛線車道評等標準，前提是符合以下任一條件： (1) 該系統具備駕駛意圖監測（DIM）功能，並隨後抑制非預期之介入，或 (2) 駕駛為凌駕系統控制所施加之轉向扭力須小於等於 3.5 Nm。 在這兩種情境下，車廠應提供一份技術文件，其中包含系統概述及佐證，以證明該系統能有效消除或減輕與側向控制相關的駕駛接受度問題。針對駕駛意圖監測系統技術文件的具體要求詳述於條文 2.4.4.2.4.5。 2.4.4.2.4.5 針對評等駕駛意圖監測系統(DIM)，TNCAP 執行機構要求車輛業者提供包含詳細技術評估資料，資料應至少包含：	

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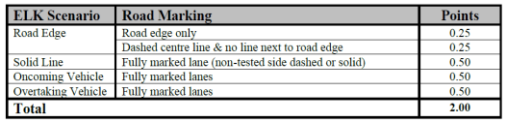
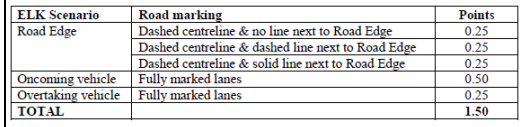
technical assessment. The dossier shall contain, as minimum: 1. Overview of the DIM System operating principle and its strategy/logic to determine driver 'intention', including a list of the Indirect/Direct input variables and their inter-dependency for suppressing undesired LKA interventions. 2. System Failsafe strategies in which DIM system is overruled e.g., o To avoid a crash with a threat on a collision course o When a driver is deemed incapacitated 3. Information describing naturalistic driving in which lane marking crossing/lane changing manoeuvring typically occurs for the vehicle, and associated driver indicator usage		(1) 駕駛意圖監測系統操作原理及其確定駕駛「意圖」之策略/邏輯概述，包括間接/直接輸入變數及其相互影響關係，以抑制非預期之車道維持輔助系統介入。 (2) 駕駛意圖監測系統之失效安全策略(Failsafe strategies)，例如： (A) 避免於行駛路線上發生碰撞之威脅。 (B) 當駕駛被認為喪失行為能力時。 (3) 描述一般行駛之資訊，包含車輛超出車道標線/車道變換操作，以及相關駕駛指示器之使用情況。	

<table>
<tr><th>2025 年版 Euro NCAP 規章</th><th>2019 年版 Euro NCAP 規章</th><th>修訂 TNCAP 條文草案(第三版)</th><th>對應 TNCAP 第二版規章</th></tr>
<tr>
<td>4. Evidence of the effectiveness of the system at suppressing undesirable LKA interventions and promoting driver acceptance

5. Any other information the OEM deems relevant to support their application</td>
<td></td>
<td>(4) 抑制非預期之車道維持輔助系統介入及提升駕駛接受度之有效佐證資料。

(5) 車輛業者認為有助於佐證其申請的任何相關資訊。</td>
<td></td>
</tr>
<tr>
<td>4.3.3.6 The available points per test are awarded based on a pass/fail basis where all tests within the scenario and road marking combination need to be a pass. The points available for the different ELK scenario and road marking combinations are detailed in the table below:
 
<table><tr><th>ELK Scenario</th><th>Road Marking</th><th>Points</th></tr><tr><td>Road Edge</td><td>Road edge only</td><td>0.25</td></tr><tr><td></td><td>Dashed centre line & no line next to road edge</td><td>0.25</td></tr><tr><td>Solid Line</td><td>Fully marked lane (non-tested side dashed or solid)</td><td>0.50</td></tr><tr><td>Oncoming Vehicle</td><td>Fully marked lanes</td><td>0.50</td></tr><tr><td>Overtaking Vehicle</td><td>Fully marked lanes</td><td>0.50</td></tr><tr><td>Total</td><td></td><td>2.00</td></tr></table></td>
<td>6.3.4.4 The available points per test are awarded based on a pass/fail basis where all tests within the scenario and road marking combination need to be a pass. The points available for the different ELK scenario and road marking combinations are detailed in the table below:
 
<table><tr><th>ELK Scenario</th><th>Road marking</th><th>Points</th></tr><tr><td>Road Edge</td><td>Dashed centreline & no line next to Road Edge</td><td>0.25</td></tr><tr><td></td><td>Dashed centreline & dashed line next to Road Edge</td><td>0.25</td></tr><tr><td></td><td>Dashed centreline & solid line next to Road Edge</td><td>0.25</td></tr><tr><td>Oncoming vehicle</td><td>Fully marked lanes</td><td>0.50</td></tr><tr><td>Overtaking vehicle</td><td>Fully marked lanes</td><td>0.25</td></tr><tr><td>TOTAL</td><td></td><td>1.50</td></tr></table></td>
<td>2.4.4.2.4.6 每一項試驗可獲得的分數以通過/未通過的標準判決，其中所有試驗情境及車道標線之組合都應符合，不同緊急車道維持輔助系統試驗情境與車道標線之組合可獲得分數如下表所示：
(請參末頁表格)</td>
<td>2.4.4.2.4.4 每一項試驗可獲得的分數以通過/未通過的標準判決，其中所有試驗情境及車道標線之組合都應符合，不同緊急車道維持輔助系統試驗情境與車道標線之組合可獲得分數如下表所示：
(請參末頁表格)</td>
</tr>
<tr>
<td>4.3.4 Total LSS Score
The total score in points is the sum of the HMI score, LKA score and ELK score.</td>
<td>6.3.5 Total LSS Score
The total score in points is the sum of the HMI score, LKA score and ELK score.</td>
<td>2.4.4.2.5 車道輔助系統總得分為人機介面得分、車道維持輔助系統得分及緊急車道維持輔助系統得分之總和。</td>
<td>2.4.4.2.5 車道輔助系統總得分為人機介面得分、車道維持輔助系統得分及緊急車道維持輔助系統得分之總和。</td>
</tr>
</table>

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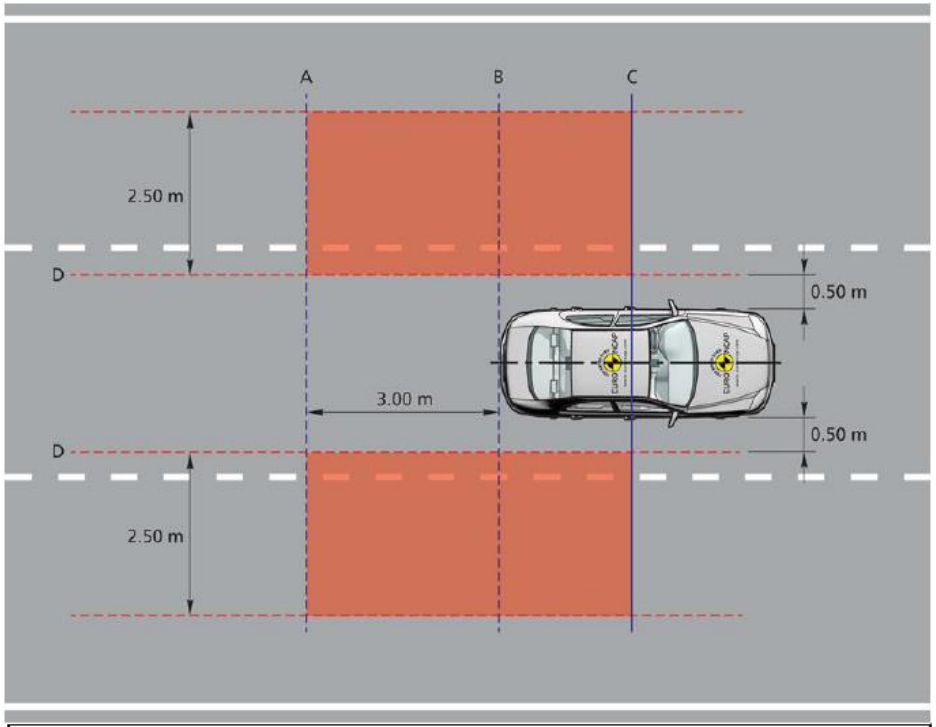
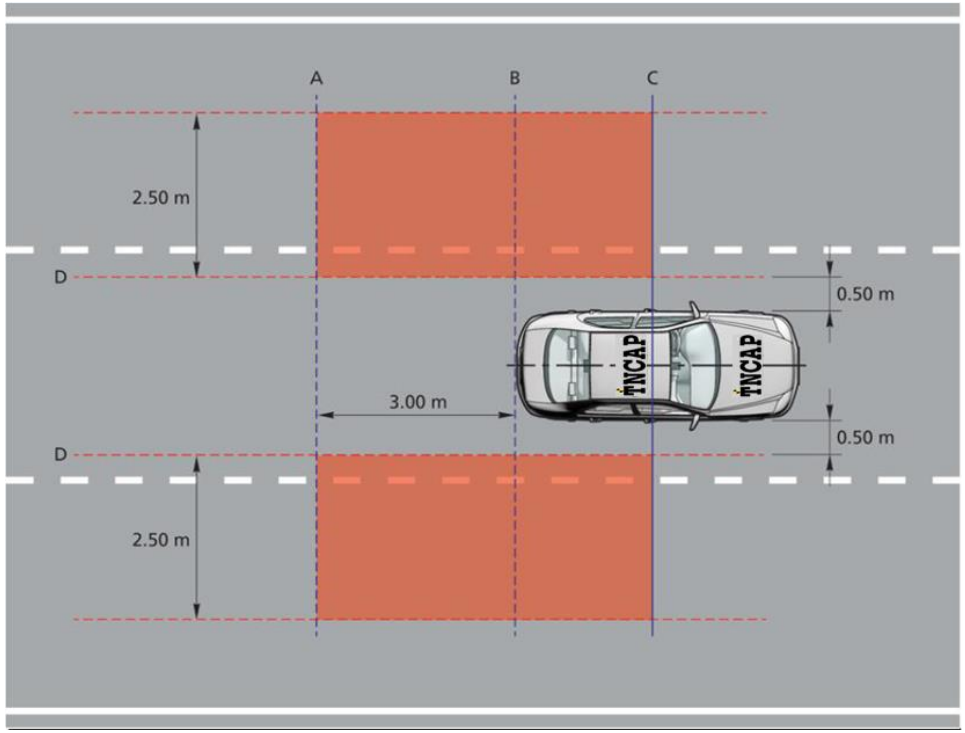
LSS Function / **Points** HMI 0.50 LKA 0.50 ELK 2.00 **Total 3.00** **4.4 Visualisation** The LSS scores are presented separately using a colour for the different LSS functions; HMI, LKA and ELK. The colours used are based on the function scores respectively, rounded to three decimal places. **Colour / Verdict / Applied to Total Score / For sub Scores** Green 'Good' 2.251 – 3.000 points 75.0% - 100.0% Yellow 'Adequate' 1.501 – 2.250 points 50.0% - 75.0% Orange 'Marginal' 0.751 – 1.500 points 25.0% - 50.0% Brown 'Weak' 0.001 – 0.750 points 00.0% - 25.0% Red 'Poor' 0.000 points 00.0%	**LSS function / Points** HMI Section 6.3.2 0.50 LKA Section 6.3.3 2.00 ELK Section 6.3.4 1.50 **TOTAL 4.00** **6.4 Visualisation** The LSS scores are presented separately using a colour for the different LSS functions; HMI, LKA and ELK. The colours used are based on the function scores respectively, rounded to three decimal places. **Colour / Verdict / Applied to Total Score / For sub Scores** Green 'Good' 3.001 - 4.000 points 75.0% - 100.0% Yellow 'Adequate' 2.001 - 3.000 points 50.0% - 75.0% Orange 'Marginal' 1.001 - 2.000 points 25.0% - 50.0% Brown 'Weak' 0.001 - 1.000 points 00.0% - 25.0% Red 'Poor' 0.000 points 00.0%	(請參末頁表格) 2.4.4.3 視覺呈現 車道輔助系統係以不同顏色來呈現不同車道輔助系統功能之得分;包括人機介面、車道維持輔助系統及緊急車道維持輔助系統。使用的顏色分別基於各別功能分數，四捨五入到小數點後三位。 另人機介面、車道維持輔助系統及緊急車道維持輔助系統等子測試項目之得分顏色呈現同上述作法辦理。 (請參末頁表格)	(請參末頁表格) 2.4.4.3 視覺呈現 車道輔助系統係以不同顏色來呈現不同車道輔助系統功能之得分;包括人機介面、車道維持輔助系統及緊急車道維持輔助系統。使用的顏色分別基於各別功能分數，四捨五入到小數點後三位。 另人機介面、車道維持輔助系統及緊急車道維持輔助系統等子測試項目之得分顏色呈現同上述作法辦理。 (請參末頁表格)

修正後	修正前
4.3.1.1  **Reference:** Symmetry left and right side of the VUT. A - Line A parallel to trailing edge of VUT and located 3.0 m behind the trailing edge of VUT B - Line B is the bidirectional extension line of the trailing edge of VUT. C - Line C is parallel to the leading edge of the VUT and located at the center of the 95th percentile eye ellipse. D – Line D is parallel to the center line of VUT and located left (/right) of the outermost edge of the left (/right) side of VUT body (excluding the rear-view mirrors), 0.5m away from the outermost edge of the left (/right) side. **Figure 4-1 Blind spot monitoring scenario assessment** Figure 4-1 Blind spot monitoring scenario assessment 2.4.4.2.2.1	

修正後	修正前
 參考: 受驗車輛左右兩側對稱 A-線段A平行於受驗車輛後緣，且距離受驗車輛後緣3.0m。 B-線段B為受驗車輛後緣的雙向延伸線。 C-線段C平行於受驗車輛前緣，且位於第 95 百分位駕駛可視範圍。 D-線段D平行於受驗車輛中心線，且距離受驗車輛車身左/右側的最外緣（不包含後視鏡）0.5m。 圖1：盲點偵測系統試驗情境評等	

修正後

LKA Scenario	Road Marking	Points
Dashed Line	Single lane marking	0.25
Solid Line	Single lane marking	0.25
Total		**0.50**

2.4.4.2.3.3

車道維持輔助系統情境	道路標線	分數
虛線	單側車道標線	0.25
實線	單側車道標線	0.25
總分		0.50

修正前

6.3.3.4

LKA Scenario	Road marking	Points
Road Edge	Road Edge only	0.25
	Road Edge with central lane marking	0.25
Dashed Line	Single lane marking	0.25
	Fully marked lane	0.50
Solid line	Single lane marking	0.25
	Fully marked lane	0.50
TOTAL		**2.00**

2.4.4.2.3.4

車道維持輔助系統情境	道路標線	分數
道路邊緣	僅道路邊緣	0.25
	道路邊緣帶有中心車道標線	0.25
虛線	單側車道標線	0.25
	完整車道標線	0.50
實線	單側車道標線	0.25
	完整車道標線	0.50
總分		2.00

4.3.3.6

ELK Scenario	Road Marking	Points
Road Edge	Road edge only	0.25
	Dashed centre line & no line next to road edge	0.25
Solid Line	Fully marked lane (non-tested side dashed or solid)	0.50
Oncoming Vehicle	Fully marked lanes	0.50
Overtaking Vehicle	Fully marked lanes	0.50
Total		**2.00**

2.4.4.2.4.6

6.3.4.4

ELK Scenario	Road marking	Points
Road Edge	Dashed centreline & no line next to Road Edge	0.25
	Dashed centreline & dashed line next to Road Edge	0.25
	Dashed centreline & solid line next to Road Edge	0.25
Oncoming vehicle	Fully marked lanes	0.50
Overtaking vehicle	Fully marked lanes	0.25
TOTAL		**1.50**

2.4.4.2.4.4

修正後

緊急車道維持輔助系統情境	道路標線	分數
道路邊緣	僅道路邊緣	0.25
	中心虛線及道路邊緣無標線	0.25
實線	完整車道標線（未測試側為虛線或實線）	0.50
對向來車	完整車道標線	0.50
車道超車	完整車道標線	0.50
總分		2.00

修正前

緊急車道維持輔助系統情境	道路標線	分數
道路邊緣	中心虛線及道路邊緣無標線	0.25
	中心虛線及道路邊緣為虛線標線	0.25
	中心虛線及道路邊緣為實線標線	0.25
對向來車	完整車道標線	0.50
車道超車	完整車道標線	0.25
總分		1.50

4.3.4

LSS Function	Points
HMI	0.50
LKA	0.50
ELK	2.00
Total	**3.00**

2.4.4.2.5

車道輔助系統功能	分數
人機介面	0.50
車道維持輔助系統	0.50
緊急車道維持輔助系統	2.00

6.3.5

LSS function		Points
HMI	Section 6.3.2	0.50
LKA	Section 6.3.3	2.00
ELK	Section 6.3.4	1.50
TOTAL		**4.00**

2.4.4.2.5

車道輔助系統功能		分數
人機介面	2.4.4.2.2節	0.50
車道維持輔助系統	2.4.4.2.3節	2.00
緊急車道維持輔助系統情境	2.4.4.2.4節	1.50

修正後

總分	3.00

4.4

Colour	Verdict	Applied to Total Score	For sub Scores
Green	'Good'	2.251 – 3.000 points	75.0% - 100.0%
Yellow	'Adequate'	1.501 – 2.250 points	50.0% - 75.0%
Orange	'Marginal'	0.751 – 1.500 points	25.0% - 50.0%
Brown	'Weak'	0.001 – 0.750 points	00.0% - 25.0%
Red	'Poor'	0.000 points	00.0%

2.4.4.3

顏色	判定	適用於總得分	功能性比
綠色	優	2.251-3.000分	75.0%-100.0%
黃色	良好	1.501-2.250分	50.0%-75.0%
橘色	尚可	0.751-1.500分	25.0%-50.0%
棕色	差	0.001-0.750分	00.0%-25.0%
紅色	不良	0.000分	00.0%
灰色	未具備	0.000分	00.0%

修正前

總分		4.00

6.4

Colour	Verdict	Applied to Total Score	For sub Scores
Green	'Good'	3.001 - 4.000 points	75.0% - 100.0%
Yellow	'Adequate'	2.001 - 3.000 points	50.0% - 75.0%
Orange	'Marginal'	1.001 - 2.000 points	25.0% - 50.0%
Brown	'Weak'	0.001 - 1.000 points	00.0% - 25.0%
Red	'Poor'	0.000 points	00.0%

2.4.4.3

顏色	判定	適用於總得分	功能性比
綠色	優	3.001-4.000分	75.0%-100.0%
黃色	良好	2.001-3.000分	50.0%-75.0%
橘色	尚可	1.001-2.000分	25.0%-50.0%
棕色	差	0.001-1.000分	00.0%-25.0%
紅色	不良	0.000分	00.0%
灰色	未具備	0.000分	00.0%

3.14盲點輔助系統試驗規章

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5.1 Test Track 5.1.2 The surface must be paved and may not contain any irregularities (e.g., large dips or cracks, manhole covers, or reflective studs) that may give rise to abnormal sensor measurements within a lateral distance of 10.0 m to either side of the test path and with a longitudinal distance of 10 m ahead of the VUT when the test ends.	**5.1 Test Track** 5.1.2 The surface must be paved and may not contain any irregularities (e.g. large dips or cracks, manhole covers or reflective studs) that may give rise to abnormal sensor measurements within a lateral distance of 3.0m to either side of the test path and with a longitudinal distance of 10m ahead of the VUT when the test ends.	3.14.4.2 試驗車道 3.14.4.2.2 盲點輔助系統試驗車道應為鋪設路面，不得有任何可能造成感測器偵測異常之不平整處(如：驟降斜坡、裂縫、人孔蓋或反光路釘)；另盲點偵測系統試驗路徑範圍兩側至少10m 及試驗結束時受驗車輛前方至少 10m。	3.14.4.2 試驗車道 3.14.4.2.2 盲點輔助系統試驗車道應為鋪設路面，不得有任何可能造成感測器偵測異常之不平整處(如：驟降斜坡、裂縫、人孔蓋或反光路釘)；另盲點偵測系統試驗路徑範圍兩側至少3.0m 及試驗結束時受驗車輛前方至少 10m。
6.2 Test Scenarios Both vehicles shall be driven/ridden such that the lateral distance between the outermost edge of the subject vehicle's body (excluding the exterior mirror) and the centreline of the TV is between 2.0 to 3.0 meter for the true warning test and 6.0 meter for the false warning test.	**6.2 Test Scenarios** Both vehicles shall be driven/ridden such that the lateral distance between the outermost edge of the subject vehicle's body (excluding the exterior mirror) and the centreline of the TV is between 2.0 to 3.0 meter for true warning test and at 6.5 meter for false warning test.	3.14.5.2 試驗情境 雙方車輛行駛過程中，受驗車輛車身最外緣(扣除外後視鏡)與目標車中心線之側向距離，在正確警示試驗(True warning test)應距 2 至 3 公尺，錯誤警示(False warning test)試驗則應距 6.0 公尺。	3.14.5.2 試驗情境 雙方車輛行駛過程中，受驗車輛車身最外緣(扣除外後視鏡)與目標車中心線之側向距離，在正確警示試驗(True warning test)應距 2 至 3 公尺，錯誤警示(False warning test)試驗則應距 6.5 公尺。
6.3 Test Conduct 6.3.4 False Warning Test The purpose of this test is to determine that the lane change warning system	**6.3 Test Conduct** 6.3.4 False warning test The purpose of this test is to determine that the lane change warning system	3.14.5.3 試驗規範 3.14.5.3.4 錯誤警示試驗 此試驗目的係為確保車道變換警示系統在目標車非位於試驗之鄰近車道	3.14.5.3 試驗規範 3.14.5.3.4 錯誤警示試驗 此試驗目的係為確保車道變換警示系統在目標車非位於試驗之鄰近車道

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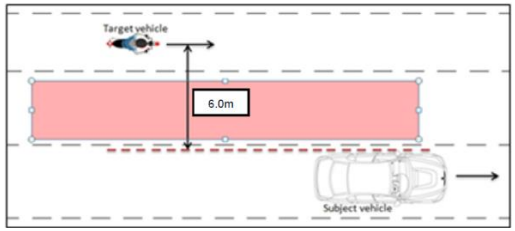
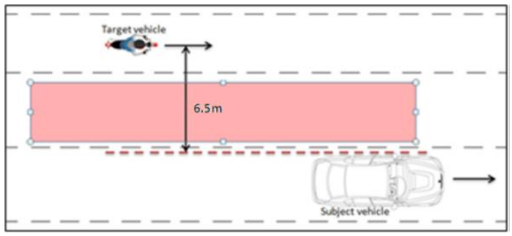
gives no warning when the target vehicle is in the lane beyond the adjacent lane. In each test, the lateral distance between the outermost edge of the subject vehicle's body (excluding the exterior mirror) and the centerline of the test target vehicle shall be maintained at 6.0 meters.	gives no warning when the target vehicle is in the lane beyond the adjacent lane. In each test, the lateral distance between the outermost edge of the subject vehicle's body (excluding the exterior mirror) and the centerline of the test target vehicle shall be maintained at 6.5 meters.	時，不應發出警示。各次試驗中，受驗車輛車身最外緣(扣除外後視鏡)和目標車中心線應距 6.0 公尺。	時，不應發出警示。各次試驗中，受驗車輛車身最外緣(扣除外後視鏡)和目標車中心線應距 6.5 公尺。
The system shall give no warning signal during these trials. All tests cover both the left and right sides of the subject vehicle. A single test run is adequate to complete the assessment.	The system shall give no warning signal during these trials. All tests cover both the left and right side of subject vehicle. Single test run is adequate to complete the assessment.	試驗過程中，系統不應發出任何警示訊號。試驗應包含受驗車輛的左右兩側。單次試驗即足以完成此項評等。	試驗過程中，系統不應發出任何警示訊號。試驗應包含受驗車輛的左右兩側。單次試驗即足以完成此項評等。
		(請參末頁圖示)	(請參末頁圖示)
Figure 8: Target vehicle shall be maintained at 6.0 meters during test	Figure 3-5: Target vehicle shall be maintained at 6.5 meters during test		
6.3.5 Test Facility Layout Both vehicles need to slow down before making a U-turn when entering Zone C	6.3.5 Test Facility Layout Both vehicles need to slow down and make a U-turn when entering Zone C	3.14.5.3.5 試驗場地配置	3.14.5.3.5 試驗場地配置

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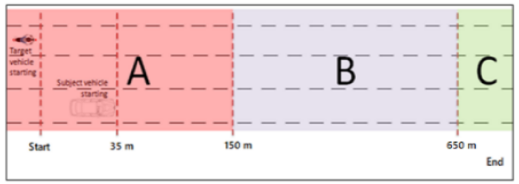
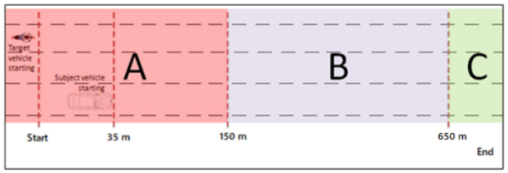
and returning to the starting line for the next run. The minimum repetition is four (4) runs for each side.  Figure 9: Test facility layout	and return to the starting line for the next run. Minimum repetition is four (4) runs for each side.  Figure 3-6: Test facility layout	兩車進入 C 區皆應於 U 型迴轉前減速，返回起始線，準備下一回試驗。各側應最少重複 4 次試驗。 …	兩車進入 C 區皆應減速並 U 型迴轉，返回起始線，準備下一回試驗。各側應最少重複 4 次試驗。 …
5 TEST PROCEDURE **5.1 Conditioning** 5.1.1 General A car (test vehicle) is used as delivered to the laboratory. There is no restriction on car selection. 5.1.2 Vehicle Preparation Set up the cameras inside and outside of the vehicle.	**6 TEST PROCEDURE** **6.1 Conditioning** A car (test vehicle) is used as delivered to the laboratory. There is no restriction on car selection. 6.1.2 Vehicle Preparation Setup the on-board test equipment and instrumentation in the vehicle. Also fit any associated cables, cabling boxes and power sources.	3.14.7盲點視覺系統試驗流程 3.14.7.1試驗條件 … 3.14.7.1.1車輛整備 在車輛內部與外部安裝攝影機。	3.14.7盲點視覺系統試驗流程 3.14.7.1試驗條件 … 3.14.7.1.1車輛整備 將車載測試設備及儀器安裝於車輛內，並裝配所有相關電線、接線盒及電源。
ANNEX A	ANNEX A	3.14.8圖示 (請參末頁圖示)	3.14.8圖示 (請參末頁圖示)

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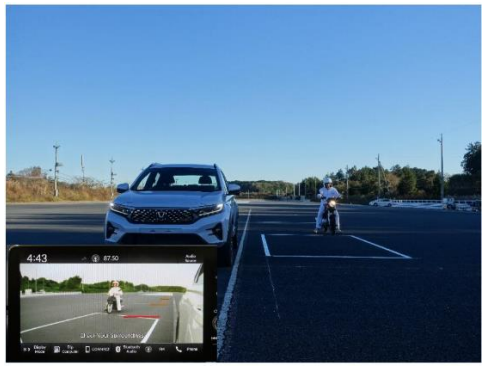
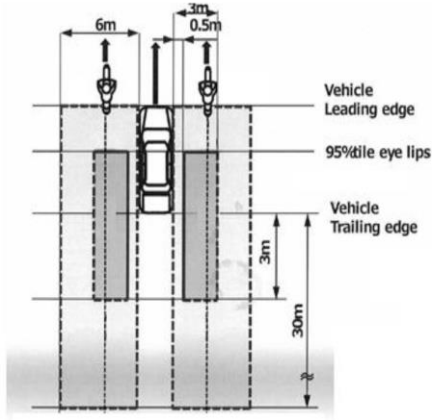
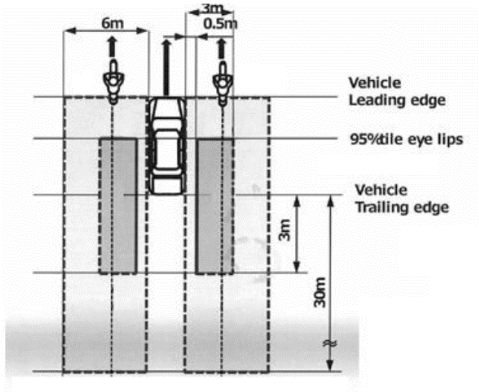
 Figure A-1: Image log of BSV test	 Figure 4-1: Video logger image of BSV test	…	…
 Figure A-2: Blind spot zone	 Figure 4-2: Blind Spot Zone		

修正後	修正前

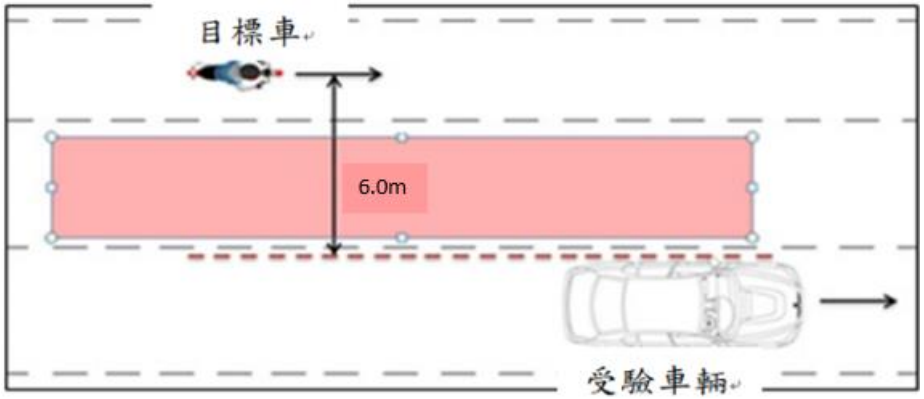
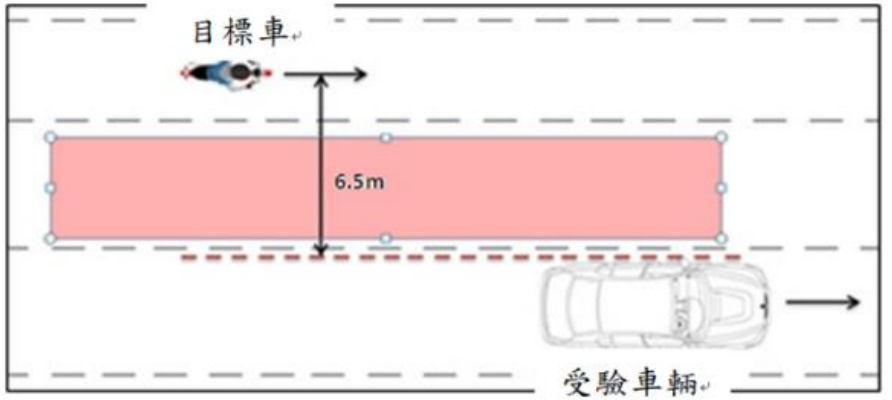

	

圖8：目標車與試驗車之側向距離應距6.0公尺	圖8：目標車與試驗車之側向距離應距6.5公尺

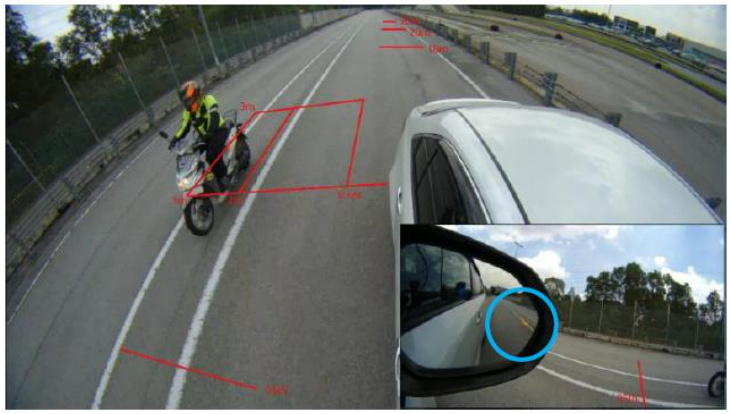
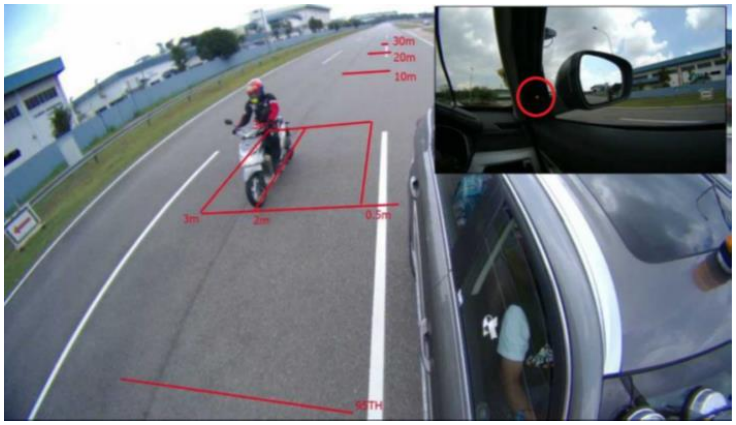
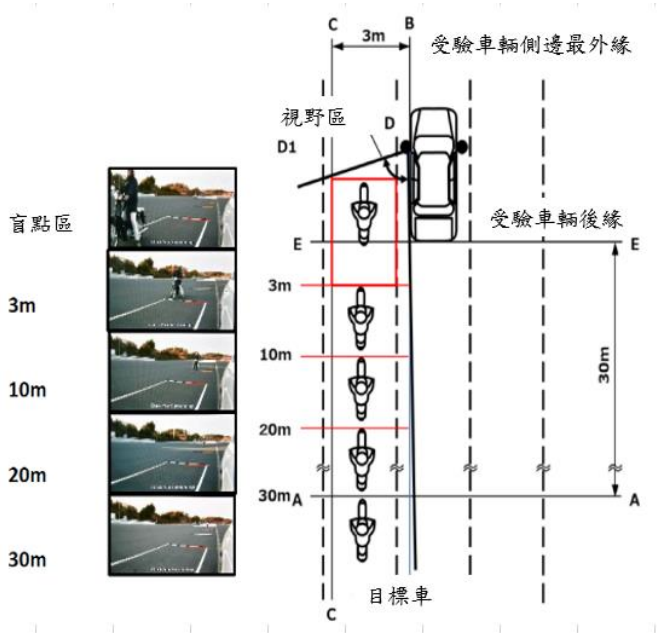
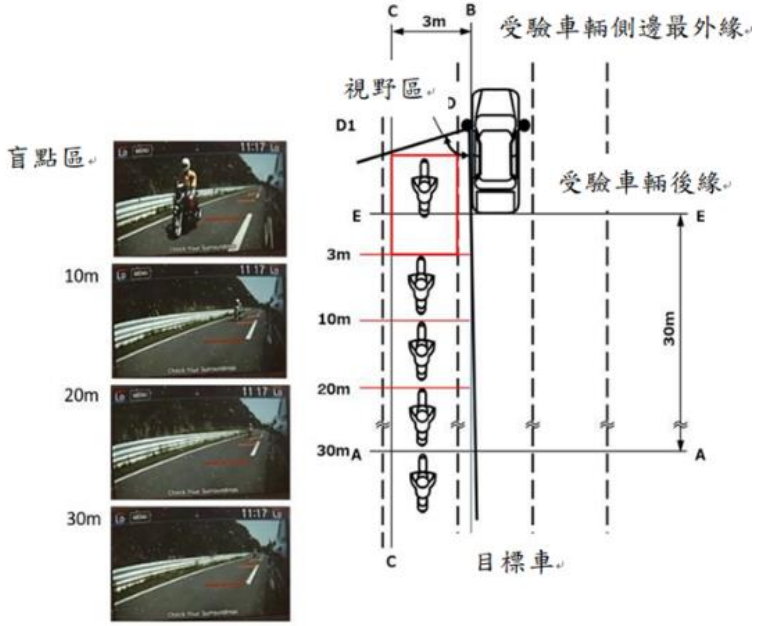

	

圖13：盲點偵測系統之試驗影像記錄器畫面	圖13：盲點偵測系統之試驗影像記錄器畫面

修正後	修正前
 圖16：功能確認與得分	 圖16：功能確認與得分

修正後	修正前

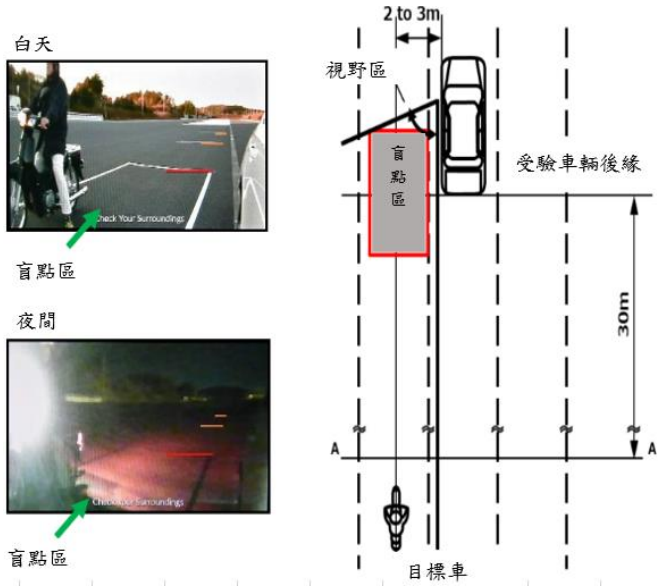
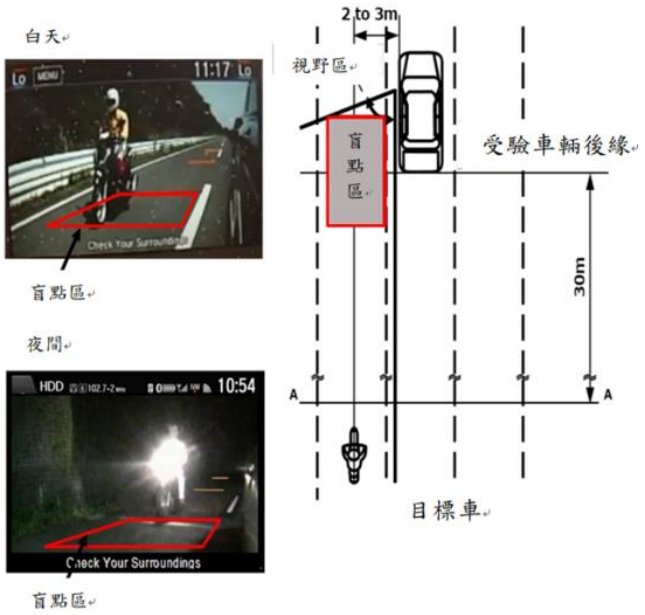

	

圖17：盲點視覺系統之盲點區即時影像	圖17：盲點視覺系統之盲點區即時影像

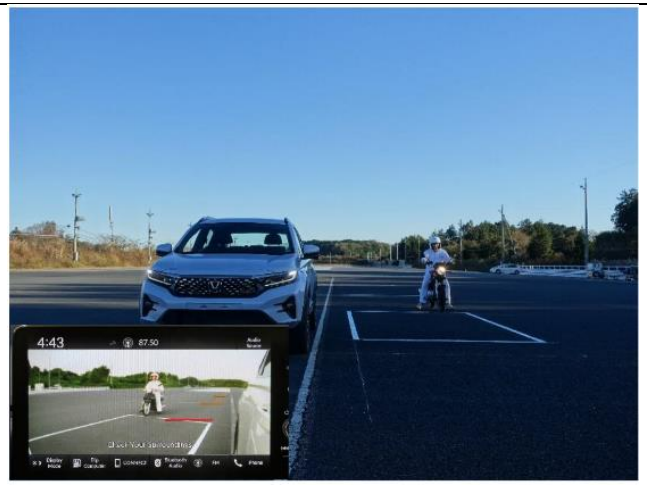



圖18：盲點視覺系統之試驗之影像記錄	圖18：盲點視覺系統之試驗之影像記錄器畫面

2.4盲點輔助系統評等規章 **<<本案暫以2.4規章編號說明盲點輔助系統試驗評等條文修訂內容，後續擬修訂至2.2碰撞預防評等規章 >>**

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3.3 Requirements for BST	**3.3 Requirements for BST**	2.4.5.2盲點輔助系統評等	2.4.5.2盲點輔助系統評等
3.3.1 To encourage manufacturers to fit these systems more broadly, ASEAN NCAP rewards both detection and non-detection types equally, with a maximum of 8 points.	3.3.1 As to encourage manufacturers to fit these systems more broadly, ASEAN NCAP rewards both detection and non-detection types equally with maximum 8 points.	2.4.5.2.1為鼓勵更多車輛業者採用上述系統，偵測型及非偵測型於TNCAP執行機構的評等分數相同，最高可獲得3分。	2.4.5.2.1為鼓勵更多車輛業者採用上述系統，偵測型及非偵測型於TNCAP執行機構的評等分數相同，最高可獲得2分。 對於配備兼具偵測型及非偵測型之受驗車輛，將採得分較高之偵測類型作為盲點輔助系統之得分。
3.3.2 ASEAN NCAP assesses compliance based on the “Functional Definitions” as described in Section 3.2.	3.3.2 ASEAN NCAP assesses the compliance based on the “Functional Definitions” as described in Section 3.2.	2.4.5.2.2TNCAP執行機構依據條文2.4.5.1「功能性定義」進行評等。	2.4.5.2.2TNCAP執行機構依據條文2.4.5.1「功能性定義」進行評等。
3.4 Scoring	**3.4 Scoring**	2.4.5.3得分與視覺呈現	2.4.5.3得分與視覺呈現
3.4.1 Vehicles for which the BST system meets all the requirements, as defined in paragraph 3.2, will be eligible for a maximum score of 8 points. Refer to the ASEAN NCAP Fitment Rating System Version 2.0.	3.4.1 Vehicles of which BST system meet all the requirements, as defined in paragraph 3.2, will be eligible for a maximum score of 8 points. Refer to ASEAN NCAP Fitment Rating System Version 1.1.	2.4.5.3.1若盲點輔助系統符合條文2.4.5.1，則該車輛最高可得3分。	2.4.5.3.1受驗車輛符合任一盲點偵測系統或盲點視覺系統，可獲得2分。

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		2.4.5.3.2盲點輔助系統係以不同顏色來呈現不同盲點輔助系統功能之得分，使用的顏色分別基於各別功能分數，四捨五入到小數點後三位。(請參末頁表格) 2.4.5.3.3受驗車輛符合任一盲點偵測系統或盲點視覺系統，可獲得2分。另如受驗車輛符合盲點偵測系統及盲點視覺系統，才能獲得評等最高3分(基本分2分加獎勵1分，共3分)。	2.4.5.3.2盲點輔助系統係以不同顏色來呈現不同盲點輔助系統功能之得分，使用的顏色分別基於各別功能分數，四捨五入到小數點後三位。(請參末頁表格)

修正後

顏色	判定	適用於總得分	功能性比
綠色	優	2.251-3.000分	75.0%-100.0%
黃色	良好	1.501-2.250分	50.0%-75.0%
橘色	尚可	0.751-1.500分	25.0%-50.0%
棕色	差	0.001-0.750分	00.0%-25.0%
紅色	不良	0.000分	00.0%
灰色	未具備	0.000分	00.0%

修正前

顏色	判定	適用於總得分	功能性比
綠色	優	1.501-2.000分	75.0%-100.0%
黃色	良好	1.001-1.500分	50.0%-75.0%
橘色	尚可	0.501-1.000分	25.0%-50.0%
棕色	差	0.001-0.500分	00.0%-25.0%
紅色	不良	0.000分	00.0%
灰色	未具備	0.000分	00.0%