項 次	規 章 名 稱	修訂內容	新增項目	頁碼	Euro NCAP 版本別
1	2.1成人保護評等規章(2.1.1-2.1.5)	◎		P.1-P.7	Version 8.0.3
2	2.4安全輔助(SA)評等規章(2.4.4)	◎		P.8-P.17	Version 8.0.4
3	3.1前方偏置撞擊試驗規章	◎		P.18-P.19	Version 7.1.3
4	3.2前方全寬撞擊試驗規章	◎		P.20-P.21	Version 1.1
5	3.3側方撞擊試驗規章	◎		P.22-P.37	Version 7.1.4
6	3.4側方立柱撞擊試驗規章	◎		P.38-P.52	Version 7.0.4
7	3.12車道輔助系統之試驗規章	◎		P.53-P.90	Version 2.0.2

ASSESSMENT PROTOCOL – ADULT OCCUPANT PROTECTION 2.1成人保護評等規章

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
2.1.1 Capping Capping limits are maintained for criteria related to critical body regions. Exceeding a capping limit generally indicates unacceptable high risk at injury or, in the case of the whiplash tests, an unacceptably high seat design parameter. In all cases, this leads to loss of all points related to the tests. Capping limits can be equal to or higher than the lower performance limit, depending on the test.	2.1.1 Capping For most tests that are part of the adult occupant protection assessment, capping limits are maintained for criteria related to critical body regions. Exceeding a capping limit generally indicates unacceptable high risk at injury or, in the case of the whiplash tests, an unacceptably high seat design parameter. In all cases except for the Full Width test, this leads to loss of all points related to the tests. In the Full Width test capping is applied only to the specific dummy where a capping limit was exceeded. Capping limits can be equal to or higher than the lower performance limit,	2.1.1.1.1 底線限制 重要身體部位皆有設定相關之底線限制。超過底線限制通常代表具有不可接受之高傷害風險，或鞭甩試驗中，座椅設計參數超過可接受範圍。所有情況下超過底線限制皆代表喪失相關試驗之所有分數。取決於各項試驗，底線限制可等於或高於較低性能限制值。	2.1.1.1.1 底線限制 成人保護評等中大部分試驗皆有設定重要身體部位相關之底線限制。超過底線限制通常代表具有不可接受之高傷害風險，或鞭甩試驗中，座椅設計參數超過可接受範圍。除了前方全寬撞擊試驗外，所有情況下超過底線限制皆代表喪失相關試驗之所有分數。前方全寬撞擊試驗之底線限制僅適用超過底線限制之特定人偶。取決於各項試驗，底線限制可等於或高於較低性能限制值。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
	depending on the test.		
3 OFFSET DEFORMABLE BARRIER FRONTAL IMPACT ASSESSMENT … 3.2.1.2 Chest … Shoulder belt load (Driver and Front Passenger) Where the shoulder belt load filtered at CFC60 exceeds 6.0kN a two point penalty is applied	**3 OFFSET DEFORMABLE BARRIER FRONTAL IMPACT ASSESSMENT** … 3.2.1.2 Chest … Shoulder belt load (Driver and Front Passenger) Where the shoulder belt load measured, exceeds 6kN a two point penalty is applied.	2.1.2 前方偏置撞擊可變形碰撞壁評等 … 2.1.2.2.1.2 胸部 … **肩部安全帶負載(駕駛與第一排乘客)** 肩部安全帶負載以 CFC 60 進行濾波，若超過 6kN，則應扣 2 分	2.1.2 前方偏置撞擊可變形碰撞壁評等 … 2.1.2.2.1.2 胸部 … **肩部安全帶負載(駕駛與第一排乘客)** 測量肩部安全帶負載時，若超過 6kN，則應扣 2 分
4 FRONTAL FULL WIDTH IMPACT ASSESSMENT … 4.2.2 Chest … Shoulder belt load (Driver and Rear Passenger) Where the shoulder belt load filtered at CFC60 exceeds 6.0kN a two point penalty is applied. 4.2.3 Knee, Femur & Pelvis Submarining (Driver and Rear Passenger) The score for the Knee, Femur & Pelvis is reduced by 4 points when submarining	**4 FRONTAL FULL WIDTH IMPACT ASSESSMENT** … 4.2.2 Chest … Shoulder belt load (Driver and Rear Passenger) Where the shoulder belt load measured, exceeds 6kN a two point penalty is applied. 4.2.3 Knee, Femur & Pelvis Submarining (Driver and Rear Passenger) The score for the Knee, Femur & Pelvis is reduced by 4 points when submarining	2.1.3 前方全寬撞擊評等 … 2.1.3.2.2 胸部 **肩部安全帶負載（駕駛與後座乘客）** 肩部安全帶負載以 CFC 60 進行濾波，若超過 6kN，則應扣 2 分。 2.1.3.2.3 膝部、股骨與骨盆 (1)潛滑(Submarining)（駕駛與後座乘客） 發生潛滑現象時，膝部、股骨與骨盆	2.1.3 前方全寬撞擊評等 … 2.1.3.2.2 胸部 **肩部安全帶負載（駕駛與後座乘客）** 測量肩部安全帶負載時，若超過 6kN，則應扣 2 分。 2.1.3.2.3 膝部、股骨與骨盆 (1)潛滑(Submarining)（駕駛與後座乘客） 發生潛滑現象時，膝部、股骨與骨盆

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
occurs. The modifier is applied when a drop in any of the two iliac forces measured is seen within 1 ms and when the submarining is confirmed on the high speed film.	occurs. The modifier is applied when a 1kN drop in any of the two iliac forces measured is seen within 1 ms and when the submarining is confirmed on the high speed film.	之分數應扣 4 分。於 1ms 內測得兩個髂骨任一髂骨發生下降，且高速影像證實有潛滑現象時，則應扣分。	之分數應扣 4 分。於 1ms 內測得兩個髂骨任一髂骨發生 1kN 下降，且高速影像證實有潛滑現象時，則應扣分。
4.3 Scoring & Visualisation The scores for the driver and rear passenger dummy are averaged. For the Full Width frontal impact, capping is applied on the critical body regions: head, neck (driver only) and chest.	4.3 Scoring & Visualisation The scores for the driver and rear passenger dummy are averaged. For the Full Width frontal impact, capping is applied on the critical body regions: head, neck (driver only) and chest.	2.1.3.3 評分與圖示說明 平均計算駕駛與後座乘客人偶之分數。針對前方全寬撞擊試驗，適用底線限制之重要身體部位為頭部、頸部（限駕駛）及胸部。	2.1.3.3 評分與圖示說明 平均計算駕駛與後座乘客人偶之分數。針對前方全寬撞擊試驗，適用底線限制之重要身體部位為頭部、頸部（限駕駛）及胸部。
To ensure similar levels of protection for all occupants, the total dummy score (excluding modifiers) of the front passenger (based on manufacturer provided data) may not be less than 90% of that of total score of the driver. The front passenger data needs to be provided to the Euro NCAP Secretariat before the full width test is performed. When this requirement is not met, the front row will be assessed using the worst performing body region of the driver and front passenger.	To ensure similar levels of protection for all occupants, the total dummy score (excluding modifiers) of the front passenger (based on manufacturer provided data) may not be less than 90% of that of total score of the driver. When this requirement is not met, the front row will be assessed using the worst performing body region of the driver and front passenger	為確保提供所有乘員相同程度之保護，第一排乘客（依照車輛業者所提數據）之人偶總分（不包括扣分）不應低於駕駛總分之 90%。第一排乘客數據必須於執行全寬試驗前提供予 TNCAP 執行機構。若未達此要求，則第一排評等應使用駕駛與第一排乘客表現最差之身體部位進行判定。	為確保提供所有乘員相同程度之保護，第一排乘客（依照車輛業者所提數據）之人偶總分（不包括扣分）不應低於駕駛總分之 90%。若未達此要求，則第一排評等應使用駕駛與第一排乘客表現最差之身體部位進行判定。
The protection provided for adults for each body region are presented visually, using	The protection provided for adults for each body region are presented visually, using	針對成人保護，每個身體部位皆於身體輪廓範圍內使用顏色區塊進行圖	針對成人保護，每個身體部位皆於身體輪廓範圍內使用顏色區塊進行圖

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
coloured segments within body outlines. The colour used is based on the points awarded for that body region (rounded to three decimal places), as follows:	coloured segments within body outlines. The colour used is based on the points awarded for that body region (rounded to three decimal places), as follows:	示說明。使用之顏色係依照該身體部位得分決定（四捨五入取到小數點第三位），如下：	示說明。使用之顏色係依照該身體部位得分決定（四捨五入取到小數點第三位），如下：
Green Good 4.000 points Yellow Adequate 2.670-3.999 points Orange Marginal 1.330-2.669 points Brown Weak 0.001-1.329 points Red Poor 0.000 points	Green Good 4.000 points Yellow Adequate 2.670-3.999 points Orange Marginal 1.330-2.669 points Brown Weak 0.001-1.329 points Red Poor 0.000 points	綠 「優」 4.000分 黃 「良好」 2.670-3.999分 橘 「尚可」 1.330-2.669分 棕 「差」 0.001-1.329分 紅 「不良」 0.000分	綠 「優」 4.000分 黃 「良好」 2.670-3.999分 橘 「尚可」 1.330-2.669分 棕 「差」 0.001-1.329分 紅 「不良」 0.000分
For frontal impact, the body regions are grouped together, with the score for the grouped body region being that of the worst performing region or limb. The grouped regions are: Head (4 points), Neck (4 points), Chest (4 points) and Knee, Femur & Pelvis (i.e. left and right femur) (4 points). Results are shown separately for driver and rear passenger	For frontal impact, the body regions are grouped together, with the score for the grouped body region being that of the worst performing region or limb. The grouped regions are: Head (4 points), Neck (4 points), Chest (4 points) and Knee, Femur & Pelvis (i.e. left and right femur) (4 points). Results are shown separately for driver and rear passenger. To ensure similar levels of protection for all occupants, the dummy score of the front passenger may not be less than 90% of that of the driver. The front passenger data needs to be provided to the Euro NCAP	針對前方全寬撞擊，身體部位會歸類一起，其分數將使用表現最差部位或四肢之分數。身體部位歸類包括：頭部（4 分）、頸部（4 分）、胸部（4 分）、膝部、股骨與骨盆（即左右股骨）(4 分)。駕駛與乘客之評等結果將個別呈現。	針對前方全寬撞擊，身體部位會歸類一起，其分數將使用表現最差部位或四肢之分數。身體部位歸類包括：頭部（4 分）、頸部（4 分）、胸部（4 分）、膝部、股骨與骨盆（即左右股骨）(4 分)。駕駛與乘客之評等結果將個別呈現。 為確保提供所有乘員相同程度之保護，第一排乘客之人偶總分不應低於駕駛總分之 90%。第一排乘客數據必須於執行全寬試驗前提供予 TNCAP 執行機構。若未達此要求，

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
	Secretariat before the full width test is performed. When this requirement is not met, the front row will be assessed using the worst performing body region of the driver and front passenger.		則第一排評等應使用駕駛與第一排乘客表現最差之身體部位進行判定。
The contribution of the frontal impact test to the Adult Occupant Protection Score is calculated by summing the body scores for the relevant body regions and calculating the average of the driver and rear passenger scores (total of 16 points each) and dividing it by two. The total achievable score for the Full Width test is 8 points	The contribution of the frontal impact test to the Adult Occupant Protection Score is calculated by summing the body scores for the relevant body regions and calculating the average of the driver and rear passenger scores (total of 16 points each) and dividing it by two. The total achievable score for the Full Width test is 8 points	成人保護分數中，前方全寬撞擊試驗之分數係加總所有相關身體部位之分數，且計算駕駛與後座乘客分數（每個人偶共 16 分）之平均值並除以二，前方全寬撞擊試驗總分為 8 分。	成人保護分數中，前方全寬撞擊試驗之分數係加總所有相關身體部位之分數，且計算駕駛與後座乘客分數（每個人偶共 16 分）之平均值並除以二，前方全寬撞擊試驗總分為 8 分。
5 SIDE BARRIER AND POLE IMPACT ASSESSMENT …	5 SIDE BARRIER AND POLE IMPACT ASSESSMENT …	2.1.4 側方碰撞壁與立柱撞擊評等 (Side barrier and pole impact assessment) …	2.1.4 側方碰撞壁與立柱撞擊評等 (Side barrier and pole impact assessment) …
5.2.3 Side Head Protection Device (Pole Impact Only)	5.2.3 Side Head Protection Device (Pole Impact Only)	2.1.4.2.3 側方頭部保護裝置（僅側方立柱撞擊試驗）	2.1.4.2.3 側方頭部保護裝置（僅側方立柱撞擊試驗）
Vehicles equipped with head protection side airbags, curtain, seat mounted or any other, will have the inflated energy absorbing areas evaluated by means of a geometric assessment. The airbags must provide protection for a range of occupant sizes in	Vehicles equipped with head protection side airbags, curtain, seat mounted or any other, will have the inflated energy absorbing areas evaluated by means of a geometric assessment. The airbags must provide protection for a range of occupant sizes in	配備側方空氣囊、簾式空氣囊、座椅式空氣囊或其他頭部保護裝置之車輛，應藉由幾何評等方式以評估充氣之能量吸收區域。空氣囊必須於車輛兩側之前座及後座提供不同體型乘員之保護。若車輛未提供足夠	配備側方空氣囊、簾式空氣囊、座椅式空氣囊或其他頭部保護裝置之車輛，應藉由幾何評等方式以評估充氣之能量吸收區域。空氣囊必須於車輛兩側之前座及後座提供不同體型乘員之保護。若車輛未提供足夠

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
both the front and the rear on both sides of the vehicle. Where a vehicle does not offer sufficient protection, a penalty of -4 points, -2 for front and -2 for rear seats, shall be applied to the overall pole impact score. Any vehicle that does not provide a head protection device covering the front and rear seat positions on both sides of the vehicle will also attract this modifier.	both the front and the rear on both sides of the vehicle. Where a vehicle does not offer sufficient protection, a penalty of -4 shall be applied to the overall pole impact score. Any vehicle that does not provide a head protection device covering the front and rear seat positions on both sides of the vehicle will also attract this modifier. Where a vehicle is only equipped with separate head protecting devices for front and rear occupants, on both sides of the vehicle, and is considered as having limited space in the rear seats†, the penalty will be -2 points for each seat row (max -4 points). † Vehicles will be considered as having limited rear space when the normal CRSs recommended by the manufacturer cannot be installed with the front seats in the test position. Where this is the case, the vehicle manufacturer should provide evidence showing that the CRS and/or child cannot be installed without interference from the vehicle.	保護，則側方立柱撞擊總分倒扣 4 分，分別為第一排座椅倒扣 2 分、後排座椅倒扣 2 分。任何車輛未提供涵蓋車輛兩側前座及後座乘員頭部保護裝置亦應扣分。	保護，則側方立柱撞擊總分倒扣 4 分。任何車輛未提供涵蓋車輛兩側前座及後座乘員頭部保護裝置亦應扣分。 若車輛兩側僅配備前座及後座乘員個別之頭部保護裝置，且該車輛被視為後座空間有限者（第一排座椅於試驗位置時，若後座無法安裝車輛業者推薦之兒童保護裝置（CRS），則該車輛視為後座空間有限者。在此情況下，車輛業者應提供在不改變車輛下無法安裝 CRS 及/或兒童之佐證資料），則每排座椅倒扣 2 分（最高扣 4 分）。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
5.2.4 Incorrect Airbag Deployment Any airbag(s) which does not deploy fully in the designed manner will attract a -1 point modifier applicable to each of the most relevant body part(s) for the affected occupant. For example, where a head curtain airbag is deemed to have deployed incorrectly, the penalty will be applied to the side impact driver's head (-1). Where the incorrect deployment affects multiple body parts, the modifier will be applied to each individual body part. For example, where a seat or door mounted side airbag fails to deploy correctly that is intended to provide protection to the head as well as the thorax, abdomen and pelvis, the penalty will be applied to all body regions, the head (-1), chest (-1), abdomen (-1) and pelvis (-1). The penalties are applicable to both the side and pole impacts, which are scaled down in the final vehicle rating.	5.2.4 Incorrect Airbag Deployment Any airbag(s) which does not deploy fully in the designed manner will attract a -1 point modifier applicable to each of the most relevant body part(s) for the affected occupant. For example, where a head curtain airbag is deemed to have deployed incorrectly, the penalty will be applied to the side impact driver's head (-1). Where the incorrect deployment affects multiple body parts, the modifier will be applied to each individual body part. For example, where a seat or door mounted side airbag fails to deploy correctly that is intended to provide protection to the head as well as the thorax, abdomen and pelvis, the penalty will be applied to two body regions, the head (-1) and the chest (-1). The two penalties would also be applicable to both the side and pole impacts, which are scaled down in the final vehicle rating.	2.1.4.2.4 不正確空氣囊開展 任何未依照原設計方式開展之空氣囊，應針對受影響乘員最相關之身體部位扣 1 分。例如若頭部簾式空氣囊被視為不正確開展，則於側方碰撞之駕駛頭部扣 1 分。若不正確之空氣囊開展影響身體多處部位，則於每個身體部位進行扣分。例如安裝於座椅或車門之側方空氣囊無法正確開展以保護頭部、胸部、腹部及骨盆時，則應分別於頭部、胸部、腹部及骨盆各扣 1 分。該扣分適用於側方撞擊與側方立柱撞擊，並於最終車輛評等時按比例調降。	2.1.4.2.4 不正確空氣囊開展 任何未依照原設計方式開展之空氣囊，應針對受影響乘員最相關之身體部位扣 1 分。例如若頭部簾式空氣囊被視為不正確開展，則於側方碰撞之駕駛頭部扣 1 分。若不正確之空氣囊開展影響身體多處部位，則於每個身體部位進行扣分。例如安裝於座椅或車門之側方空氣囊無法正確開展以保護頭部、胸部、腹部及骨盆時，則應分別於頭部及胸部各扣 1 分。該兩項扣分適用於側方撞擊與側方立柱撞擊，並於最終車輛評等時按比例調降。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
6.2 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.	**6.2 Definitions**	2.4.4.1 名詞釋義 2.4.4.1.1 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車道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。	2.4.4.1 名詞釋義
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 of the current travel lane.	2.4.4.1.2 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。	2.4.4.1.1 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。
Lane Departure Warning (LDW) – a warning that is provided automatically by the vehicle in response to the vehicle that is about to drift beyond a delineated edge line of the current travel lane. …	**Lane Departure Warning (LDW)** – a warning that is provided automatically by the vehicle in response to the vehicle that is about to drift beyond a delineated edge line of the current travel lane.	2.4.4.1.3 車道偏離輔助警示系統(Lane Departure Warning, LDW）:車輛偵測到即將偏離目前行駛之車道邊界標線時，所自動出現之警示。 …	2.4.4.1.2 車道偏離輔助警示系統(Lane Departure Warning, LDW）:車輛偵測到即將偏離目前行駛之車道邊界標線時，所自動出現之警示。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
	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.		2.4.4.1.3 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、活動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。
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.	…	2.4.4.1.5 碰撞時間（Time To Collision, TTC）：若受驗車輛與目標車皆依其速度向前行進，受驗車輛會碰撞目標車之預估時間值。	…
Lane Edge – means the inner side of the lane marking or the road edge		2.4.4.1.6 車道邊緣(Lane Edge): 係指車道標線內側或道路邊緣。	
	Time To Line Crossing (TTLC) – means the remaining time before the VUT crosses the line, assuming that the VUT would continue to travel with the same lateral velocity towards the lane.		2.4.4.1.5 越線剩餘時間（Time To Line Crossing, TTLC）：假設受驗車輛持續以相同側向速度偏離向車道標線，受驗車輛距越線前所剩餘時間。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
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.	**Distance To Line Crossing (DTLC) –** means the remaining lateral distance (perpendicular to the line) between the inner side of the lane marking and most outer edge of the tire, before the VUT crosses the line, assuming that the VUT would continue to travel with the same lateral velocity towards the lane marking.	2.4.4.1.7 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）。	2.4.4.1.6 越線剩餘距離（Distance To Line Crossing, DTLC）：假設受驗車輛以相同側向速度偏離車道標線，車道標線內緣與輪胎外緣間距越線前所剩餘距離（與車道標線垂直）。
6.3 Criteria and Scoring	**6.3 Criteria and Scoring**	2.4.4.2 標準與得分	2.4.4.2 標準與得分
6.3.1 To be eligible for scoring points in Lane Support Systems, the vehicle must be equipped with an ESC system that complies with UNECE Regulation 13H. For any system, the driver must be able to override the intervention by the system.	6.3.1 To be eligible for scoring points in Lane Support Systems, the vehicle must be equipped with an ESC system that complies with UNECE Regulation 13H.	2.4.4.2.1 車道輔助系統項目之得分，車輛應裝設符合車輛安全檢測基準「八十五、車輛穩定性電子式控制系統」。 無論任何系統，駕駛者應能優先介入該系統。	2.4.4.2.1 車道輔助系統項目之得分，車輛應裝設聯合國 UN R13H 或 R140 規範之車輛穩定性電子式控制系統，或車輛安全檢測基準「八十五、車輛穩定性電子式控制系統」。
6.3.2 Human Machine Interface (HMI) HMI points can be achieved for the following:	6.3.2 Human Machine Interface (HMI) HMI points can be achieved for the following:	2.4.4.2.2 人機介面 人機介面之得分規範如下：	2.4.4.2.2 人機介面 人機介面之得分規範如下：

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
•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 LDW points are awarded automatically.	**•Default ON 0.2 points** All LKA and/or LDW systems are default ON at the start of every journey. **•Haptic/Supplementary Warning 0.2 points** For LDW systems a more sophisticated haptic warning like a vibrating steering wheel is awarded. For LKA a supplementary warning which is issued simultaneously to the intervention or when the LKA cannot keep the car in lane is awarded. When an LKA system ensures that the vehicle will not leave the lane in any of the Euro NCAP tests, points are awarded by default.	(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，則將自動獲得車道偏離輔助警示系統之分數。	(1) 預設啟用 0.2 分 所有車道維持輔助系統及/或車道偏離輔助 警示系統在每一趟旅程開始時之預設狀態為「開啟」。 (2) 觸覺/輔助警示 0.2 分 若車道偏離輔助警示系統設有進階之觸覺警示，如震動方向盤，即可獲得分數。 若車道維持輔助系統介入作動時或無法讓車輛維持在車道內時發出輔助警示，即可獲得分數。若車道維持輔助系統能確保車輛於全程試驗過程中維持在車道內，即可獲得分數。
•Blind Spot Monitoring 0.25 points The vehicle is additionally equipped with a Blind Spot Monitoring system to warn the driver of other vehicles	**•Blind Spot Monitoring 0.1 points** The vehicle is additionally equipped with a Blind Spot Monitoring system to warn the driver of other vehicles present in the blind spot.	(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。	(3) 盲點偵測系統 0.1 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。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
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.		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。	
6.3.3 Lane Keep Assist (LKA)	6.3.3 Lane Keeping Assist (LKA) / Lane Departure Warning (LDW)	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/車道偏離輔助警示系統
6.3.3.1 For LKA system tests, the assessment criteria used is the Distance to Lane Edge (DTLE).	6.3.3.1 For both LKA and LDW system tests, the assessment criteria used is the Distance to Line Crossing, DTLC. The limit value for DTLC for LDW is set to -0.3m, meaning that the vehicle is allowed to cross the inner edge of the lane marking by a maximum of 0.3m before the warning occurs.	2.4.4.2.3.1 車道維持輔助系統其使用之評等標準為車道邊緣剩餘距離。	2.4.4.2.3.1 車道維持輔助系統及車道偏離輔助警示系統，其使用之評等標準為越線剩餘距離。 車道偏離輔助警示系統之越線剩餘距離限制值為-0.3m，意即車輛最多可越過車道邊界標線內緣 0.3m 前應出現警示。
6.3.3.2 The limit value for DTLE for LKA tests is set to -0.3m for testing against lines, meaning that the LKA system must not permit the VUT to cross the inner edge of the lane	The limit value for DTLC for LKA is set to -0.4m, meaning that the LKA system must not permit the VUT to cross the inner edge of the lane marking by a distance greater than	2.4.4.2.3.2 車道維持輔助系統試驗之試驗路徑，車道邊緣剩餘距離限值則為-0.3m，意即車輛最多可越過車道邊界標線內緣 0.3m 前應作動。	車道維持輔助系統之越線剩餘距離限值則為-0.4m，意即車輛最多可越過車道邊界標線內緣 0.4m 前應作動。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
marking by a distance greater than 0.3m. 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. 6.3.3.4 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 LKA scenario and road marking combinations are detailed in the table below: (請參考末頁表格) 6.3.4 Emergency Lane Keeping (ELK) 6.3.4.1 From 2020 onwards, to be	0.4m. The available points per test are awarded based on a pass/fail basis. The points available for the different systems are detailed in the table below: 6.3.3.2 Points for the LKA function are awarded when the VUT passes 3 out	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。 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： (請參考末頁表格) 2.4.4.2.4 緊急車道維持輔助系統 2.4.4.2.4.1 車道輔助系統之緊急車道	每項試驗之得分以通過/未通過作判定; LKA/LDW 系統之得分條件如下表所示： 2.4.4.2.3.2 受驗車輛應通過車道維持輔助系統五項試驗中的三項(左右側

Lateral speed	LKA	LDW	
	Solid line on fully marked lane (left and right side)	Single dashed line (left and right side)	Single solid line (left and right side)
0.1 m/s	Pass/Fail	-	-
0.2 m/s	Pass/Fail	-	-
0.3 m/s	Pass/Fail	Pass/Fail	Pass/Fail
0.4 m/s	Pass/Fail	-	-
0.5 m/s	Pass/Fail	Pass/Fail	Pass/Fail
Total	1.0	1.5	

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
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. 6.3.4.2 For ELK Road Edge tests, the assessment criteria used is the Distance to Lane Edge (DTLE). The limit value for DTLE for ELK Road Edge tests is set to -0.1m, meaning that the vehicle is only allowed to have a part of the front wheel outside of the road edge. 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.	of 5 tests (on both left and right side), while for the LDW function all tests need to pass to get the points. • LKA + LDW (combined) Systems offering both LKA and LDW functions, these functions are tested and assessed separately. •LKA only A systems that only offer the LKA function will be tested and assessed in both the LKA and LDW scenarios. •LDW only For systems that only offer the LDW function, the function will be tested and assessed in the LDW scenarios only.	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。 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。 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-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。 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。	皆須通過），即可獲得之分數；受驗車輛應通過車道偏離輔助警示系統所有試驗才能獲得分數。 (1) 車道維持輔助系統＋車道偏離輔助警示系統（整合） 若受驗車輛同時提供車道維持輔助系 統與車道偏離輔助警示系統功能，則這些功能應分別進行試驗及評等。 (2) 僅有車道維持輔助系統 若受驗車輛僅提供車道維持輔助系統功 能，則其功能應於車道維持輔助系統與車道偏離輔助警示系統情境試驗中試驗及評等。 (3) 僅有車道偏離輔助警示系統 若受驗車輛只提供車道偏離輔助警示系統功能，則其功能僅需在車道偏離輔助警示系統情境試驗中試驗及評等。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
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: (請參考末頁表格)		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： (請參考末頁表格)	
6.3.5 Total LSS Score The total score in points is the sum of the HMI score, LKA score and ELK score. (請參考末頁表格)	6.3.4 Total LSS Score The total score in points is the sum of the HMI score, LKA score and LDW score.	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。 (請參考末頁表格)	2.4.4.2.4 車道輔助系統總得分 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車道偏離輔助警示系統得分之總和。
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. (請參考末頁表格)		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。 (請參考末頁表格)	

2019年Euro NCAP規章

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

修訂TNCAP條文草案

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

2019年Euro NCAP規章

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

修訂TNCAP條文草案

2.4.4.2.4.4

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

2019年Euro NCAP規章

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**

修訂TNCAP條文草案

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
總分		**4.00**

2019年Euro NCAP規章

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%

修訂TNCAP條文草案

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%

OFFSET DEFORMABLE BARRIER FRONTAL IMPACT TESTING PROTOCOL 3.1前方偏置撞擊試驗規章

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
1 VEHICLE PREPARATION	**1 VEHICLE PREPARATION**	3.1.1 車輛整備	3.1.1 車輛整備
…	…	…	…
1.2.6 In the child restraints to be used for testing, place masses equivalent to Q6 and Q10 child dummies on the second-row driver's side seat and passenger's side seat respectively (23kg and 36kg). If the child restraints are not available at this time then default masses of 7kg and 2kg should be added to the dummy masses	1.2.6 In the child restraints to be used for testing, place masses equivalent to Q6 and Q10 child dummies on the rear driver seat and passenger seats respectively (23kg and 36kg). If the child restraints are not available at this time then default masses of 7kg and 2kg should be added to the dummy masses.	3.1.1.2.6 於第二排駕駛側座椅與乘客側座椅之試驗用兒童保護裝置，分別放置相當於 Q6 及 Q10 兒童人偶之重量（23kg 及 36kg）。若此時無法使用兒童保護裝置，則於人偶重量分別加上 7kg 及 2kg 之預設重量(Default mass)。	3.1.1.2.6 於駕駛座及乘客座椅後方之試驗用兒童保護裝置，分別放置相當於 Q6 及 Q10 兒童人偶之重量（23kg 及 36kg）。若此時無法使用兒童保護裝置，則於人偶重量分別加上 7kg 及 2kg 之預設重量(Default mass)。
…	…	…	…
1.4.8 In the child restraints to be used for testing, place masses equivalent to Q6 and Q10 child dummies on the second-row driver's side seat and passenger's side seat respectively (23kg and 36kg). If the child restraints are not available at this time then default masses of 7kg and 2kg should be added to the dummy masses.	1.4.8 In the child restraints to be used for testing, place masses equivalent to Q6 and Q10 child dummies on the rear driver's seat and passenger seat respectively (23kg and 36kg). If the child restraints are not available at this time then default masses of 7kg and 2kg should be added to the dummy masses.	3.1.1.4.8 於第二排駕駛側座椅與乘客側座椅之試驗用兒童保護裝置，分別放置相當於 Q6 及 Q10 兒童人偶之重量（23kg 及 36kg）。若此時無法使用兒童保護裝置，則於人偶重量分別加上 7kg 及 2kg 之預設重量。	3.1.1.4.8 於駕駛座及乘客座椅後方之試驗用兒童保護裝置，分別放置相當於 Q6 及 Q10 兒童人偶之重量（23kg 及 36kg）。若此時無法使用兒童保護裝置，則於人偶重量分別加上 7kg 及 2kg 之預設重量。
…	…	…	…
1.4.12 For fully electric vehicles, if a total vehicle mass within 25kg of the reference mass cannot be achieved, it is acceptable for the total mass to be within 2% of the	1.4.12 For fully electric vehicles, if a total vehicle mass within 25kg of the reference mass cannot be achieved, it is acceptable for the total mass to be within 2% of the	3.1.1.4.12 對於純電動車輛，若車輛總重量與參考車重之差異無法小於 25kg，則總重量與參考車重之差異應在 2%以內。經車輛業者同意，可	3.1.1.4.12 對於純電動車輛，若車輛總重量與參考車重之差異無法小於 25kg，則總重量與參考車重之差異應在 2%以內。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
reference mass. A heavier test mass may be used with the agreement of the OEM, the test mass must not be below the minimum value of the specified tolerances.	reference mass.	使用較重之重量進行試驗，惟試驗重量不得低於宣告容許誤差之最小值。	
5.1 Determination of and Setting the Fore/aft, Tilt and Lumbar Settings of Seat … 5.1.11 If the seat base is adjustable for tilt it may be set to any angle from the flattest up to its mid position according to the manufacturer's preference.	5.1 Determination of and Setting the Fore/aft, Tilt and Lumbar Settings of Seat … 5.1.11 If the seat base is adjustable for tilt it may be set to any angle from the flattest up to its mid position according to the manufacturer's preference. The same seat tilt setting must be used for frontal and side impact.	3.1.5.1 座椅前後位置、傾斜度與腰部支撐設定 … 3.1.5.1.11 若座椅底座傾斜度可調整，則依車輛業者宣告，調整至最低(Flattest)至中間位置間之任何角度。	3.1.5.1 座椅前後位置、傾斜度與腰部支撐設定 … 3.1.5.1.11 若座椅底座傾斜度可調整，則依車輛業者宣告，調整至最低(Flattest)至中間位置間之任何角度。前方與側方撞擊所使用的座椅傾斜度必須相同
6.3 Dummy Installation It is the intention that the dummy should not be left to sit directly on the seat for more than 2 hours prior to the test. It is acceptable for the dummy to be left in the vehicle for a longer period, provided that the dummy position is checked no more than 1 hour prior to test. It is not acceptable for the dummy to be left in the vehicle overnight or for a similarly lengthy period	6.3 Dummy Installation It is the intention that the dummy should not be left to sit directly on the seat for more than 6 hours prior to the test. It is not acceptable for the dummy to be left in the vehicle overnight or for a similarly lengthy period.	3.1.6.3 人偶安裝 試驗前，人偶不應直接坐在座椅上超過 2 小時。若試驗前 1 小時內檢查人偶定位，則允許人偶放置車內較長時間。不應將試驗人偶整晚留置車內或類似長度的時間。	3.1.6.3 人偶安裝 試驗前，人偶不應直接坐在座椅上超過 6 小時，亦不應將試驗人偶整晚留置車內或類似長度的時間。

FULL WIDTH FRONTAL IMPACT TESTING PROTOCOL 3.2前方全寬撞擊試驗規章

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
1.4 Vehicle Preparation … 1.4.11 For fully electric vehicles, if a total vehicle mass within 25kg of the reference mass cannot be achieved, it is acceptable for the total mass to be within 2% of the reference mass. A heavier test mass may be used with the agreement of the OEM, the test mass must not be below the minimum value of the specified tolerances.	1.4 Vehicle Preparation … 1.4.11 For fully electric vehicles, if a total vehicle mass within 25kg of the reference mass cannot be achieved, it is acceptable for the total mass to be within 2% of the reference mass.	3.2.1.4 車輛整備 … 3.2.1.4.11 對於純電動車輛，若車輛總重量與參考車重之差異無法小於25kg，則總重量與參考車重之差異應在 2%以內。經車輛業者同意，可使用較重之重量進行試驗，惟試驗重量不得低於宣告容許誤差之最小值。	3.2.1.4 車輛整備 … 3.2.1.4.11 對於純電動車輛，若車輛總重量與參考車重之差異無法小於25kg，則總重量與參考車重之差異應在 2%以內。
3 DUMMY PREPARATION AND CERTIFICATION **3.1 General** Hybrid III 05F test dummies should be used for the front driver seat and the second-row passenger seat, on the opposite side to the driver. They should conform to U.S. Department of transportation, Code of Federal Regulations Part 572 Subpart O, except for modifications and additions stated later. The parts of the dummy should be following the latest agreed brand harmonised design:	**3 DUMMY PREPARATION AND CERTIFICATION** **3.1 General** Hybrid III 05F test dummies should be used for the front driver seat and the rear passenger seat, at the opposite to the driver. They should conform to U.S. Department of transportation, Code of Federal Regulations Part 572 Subpart O, except for modifications and additions stated later. The parts of the dummy should be following the latest agreed brand harmonised design:	3.2.3.人偶整備及查驗 3.2.3.1 通則 Hybrid III 百分之五成年女性試驗人偶應安裝於第一排駕駛座及駕駛另一側的第二排乘客座位，且除本文件後續所提到的調整及配件外，應符合美國運輸部聯邦法規(Code of federal regulation, CFR)572 部 O 分部(Part 572 O)之規定。人偶零件應依照最新的品牌統一設計：	3.2.3.人偶整備及查驗 3.2.3.1 通則 Hybrid III 百分之五成年女性試驗人偶應安裝於第一排駕駛座及駕駛另一側的後排乘客座位，且除本文件後續所提到的調整及配件外，應符合美國運輸部聯邦法規(Code of federal regulation, CFR)572 部 O 分部(Part 572 O)之規定。人偶零件應依照最新的品牌統一設計：

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
6.2 Dummy Installation It is the intention that the dummy should not be left to sit directly on the seat for more than 2 hours prior to the test. It is acceptable for the dummy to be left in the vehicle for a longer period, provided that the dummy position is checked no more than 1 hour prior to test. It is not acceptable for the dummy to be left in the vehicle overnight or for a similarly lengthy period	6.2 Dummy Installation It is the intention that the dummy should not be left to sit directly on the seat for more than 6 hours prior to the test. It is not acceptable for the dummy to be left in the vehicle overnight or for a similarly lengthy period	3.2.6.2 試驗人偶安裝 試驗前，人偶不應直接坐在座椅上超過 2 小時。若試驗前 1 小時內檢查人偶定位，得允許人偶放置車內較長時間。不應將試驗人偶整晚留置車內或類似長度的時間。	3.2.6.2 試驗人偶安裝 試驗前，人偶不應直接坐在座椅上超過 6 小時，亦不應將試驗人偶整晚留置車內或類似長度的時間。

SIDE IMPACT MOBILE DEFORMABLE BARRIER TESTING PROTOCOL 3.3側方撞擊試驗規章

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
1 VEHICLE PREPARATION	**1 VEHICLE PREPARATION**	3.3.1.車輛整備	3.3.1.車輛整備
…	…	…	…
1.2.4 In the child restraints to be used for testing, place masses equivalent to Q10 and Q6 child dummies on the second-row driver's side seat and passenger's side seat respectively (23kg and 36kg). If the child restraints are not available at this time then default masses of 7kg and 2kg should be added to the dummy masses.	1.2.4 In the child restraints to be used for testing, place masses equivalent to Q10 and Q6 child dummies on the rear driver seat and passenger seats respectively (23kg and 36kg). If the child restraints are not available at this time then default masses of 7kg and 2kg should be added to the dummy masses.	3.3.1.2.4 於第二排駕駛側座椅與乘客側座椅之試驗用兒童保護裝置，分別放置相當於 Q10 及 Q6 兒童人偶之重量（36kg 及 23kg）。若此時無法使用兒童保護裝置，則於人偶重量分別加上 2kg 及 7kg 之預設重量(Default masses)。	3.3.1.2.4 於駕駛座及乘客座椅後方之試驗用兒童保護裝置，分別放置相當於 Q10 及 Q6 兒童人偶之重量（36kg 及 23kg）。若此時無法使用兒童保護裝置，則於人偶重量分別加上 2kg 及 7kg 之預設重量(Default masses)。
…	…	…	…
1.4.5 In the child restraints to be used for testing, place masses equivalent to Q6 and Q10 child dummies on the second-row driver's side seat and passenger's side seat respectively (23kg and 36kg). If the child restraints are not available at this time then default masses of 7kg and 2kg should be added to the dummy masses.	1.4.5 In the child restraints to be used for testing, place masses equivalent to Q6 and Q10 child dummies on the rear driver seat and passenger seats respectively (23kg and 36kg). If the child restraints are not available at this time then default masses of 7kg and 2kg should be added to the dummy masses.	3.3.1.4.5 於第二排駕駛側座椅與乘客側座椅之試驗用兒童保護裝置，分別放置相當於 Q10 及 Q6 兒童人偶之重量（36kg 及 23kg）。若此時無法使用兒童保護裝置，則於人偶重量分別加上 2kg 及 7kg 之預設重量。	3.3.1.4.5 於駕駛座及乘客座椅後方之試驗用兒童保護裝置，分別放置相當於 Q10 及 Q6 兒童人偶之重量（36kg 及 23kg）。若此時無法使用兒童保護裝置，則於人偶重量分別加上 2kg 及 7kg 之預設重量。
…	…	…	…
1.4.9 For fully electric vehicles, if a total vehicle mass within 25kg of the reference mass cannot be achieved, it is acceptable for the total mass to be within 2% of the	1.4.9 For fully electric vehicles, if a total vehicle mass within 25kg of the reference mass cannot be achieved, it is acceptable for the total mass to be within 2% of the	3.3.1.4.9 對於純電動車輛，若車輛總重量與參考車重之差異無法小於 25kg，則總重量與參考車重之差異應在 2%以內。經車輛業者同意，可	3.3.1.4.9 對於純電動車輛，若車輛總重量與參考車重之差異無法小於 25kg，則總重量與參考車重之差異應在 2%以內。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
reference mass. A heavier test mass may be used with the agreement of the OEM, the test mass must not be below the minimum value of the specified tolerances.	reference mass.	使用較重之重量進行試驗，惟試驗重量不得低於宣告容許誤差之最小值。	
2 DUMMY PREPARATION AND CERTIFICATION 2.1 General 2.1.1 A WorldSID 50th percentile male test dummy shall be used in the front driver's position. It shall conform to the specification detailed in ISO 15830, parts 1-5.	**2 DUMMY PREPARATION AND CERTIFICATION** 2.1 General 2.1.1 A WorldSID 50th percentile male test dummy shall be used in the front driver's position. It shall conform to the specficiation detailed in ISO 15830, parts 1-4, May 2013 and the revisions documented in WG5 N1041, revision 4, dated 3rd October 2014.	3.3.2 人偶整備及查驗(Certification) 3.3.2.1 通則 3.3.2.1.1WorldSID 百分之五０成年男性試驗人偶應安裝於駕駛座，該人偶應符合 ISO 15830 第 1 至 5 部詳列之規格。	3.3.2 人偶整備及查驗(Certification) 3.3.2.1 通則 3.3.2.1.1 WorldSID 百分之五０成年男性試驗人偶應安裝於駕駛座，該人偶應符合 2013 年 5 月 ISO 15830 第 1 至 4 部分詳列之規格，並符合 2014 年 10 月 3 日 WG5 N1041 第四次修訂之修訂條文。
2.4 Dummy Clothing and Footwear 2.4.1WorldSID 2.4.1.1The dummy shall be clothed in a sleeveless suit or a modified version of the sleeved suit with sleeves removed.	2.4 Dummy Clothing and Footwear 2.4.1 WorldSID 2.4.1 The clothing shall conform to clothing assembly drawing W50-80100.pdf (see Annex C of ISO 15830) and the subassemblies and component drawings listed therein.	3.3.2.4 人偶衣著及鞋履 3.3.2.4.1 WorldSID 百分之五０成年男性人偶 3.3.2.4.1.1 人偶應穿著無袖上衣或改良版可移除衣袖式上衣。	3.3.2.4 人偶衣著及鞋履 3.3.2.4.1 WorldSID 百分之五０成年男性人偶 3.3.2.4.1.1 衣著應符合衣著裝配圖 W50-80100.pdf（參見 ISO 15830 附件 C），及其內附之次裝配與組件圖示。
2.6 WorldSID Dummy painting and marking 2.6.1 The dummy shall have masking tape placed on the areas to be painted using the	2.6 WorldSID Dummy painting and marking 2.6.1 The dummy shall have masking tape placed on the areas to be painted using the	3.3.2.6 WorldSID 百分之五０成年男性人偶塗色及標記 3.3.2.6.1 應於人偶預定塗色之區域，	3.3.2.6 WorldSID 百分之五０成年男性人偶塗色及標記 3.3.2.6.1 應於人偶預定塗色之區域，

<table>
<tr><th>2019 年版 Euro NCAP 規章</th><th>2017 年版 Euro NCAP 規章</th><th>修訂 TNCAP 條文草案</th><th>對應 TNCAP 條文</th></tr>
<tr>
<td>sizes detailed below. The tape should be completely covered with the following coloured paints. The paint should be applied close to the time of the test to ensure that the paint will still be wet on impact.
Driver
<table>
<tr><td>Head(Paint tape outline)</td><td>Red</td></tr>
<tr><td>Head CoG(circle Ø40mm)</td><td>Yellow</td></tr>
<tr><td>Head top along mid sagittal plane</td><td>Green</td></tr>
<tr><td>Shoulder /Arm</td><td>Blue</td></tr>
<tr><td>2nd Thorax Rib</td><td>Green</td></tr>
<tr><td>3rd Thorax Rib</td><td>Red</td></tr>
<tr><td>1st Abdoment Rib</td><td>Blue</td></tr>
<tr><td>2nd Abdoment Rib</td><td>Green</td></tr>
<tr><td>Pelvis</td><td>Orange</td></tr>
</table>
</td>
<td>sizes detailed below. The tape should be completely covered with the following coloured paints. The paint should be applied close to the time of the test to ensure that the paint will still be wet on impact.
Driver
<table>
<tr><td>Head(Paint tape outline)</td><td>Red</td></tr>
<tr><td>Head CoG(circle)</td><td>Orange</td></tr>
<tr><td>Shoulder /Arm</td><td>Blue</td></tr>
<tr><td>2nd Thorax Rib</td><td>Green</td></tr>
<tr><td>3rd Thorax Rib</td><td>Red</td></tr>
<tr><td>1st Abdoment Rib</td><td>Blue</td></tr>
<tr><td>2nd Abdoment Rib</td><td>Green</td></tr>
<tr><td>Pelvis</td><td>Orange</td></tr>
</table>
</td>
<td>以下方詳列之範圍黏貼紙膠帶。膠帶應徹底塗滿下列指定顏色，唯駕駛頭部僅於膠帶邊緣塗色，顏料應於接近試驗時間時塗上，以確保撞擊時顏料未乾。
駕駛
<table>
<tr><td>頭部（僅膠帶輪廓塗色）</td><td>紅</td></tr>
<tr><td>頭部重心(圓圈直徑40mm）</td><td>黃</td></tr>
<tr><td>頭頂沿正中矢狀切面</td><td>綠</td></tr>
<tr><td>肩部/手臂</td><td>藍</td></tr>
<tr><td>胸部第二肋骨</td><td>綠</td></tr>
<tr><td>胸部第三肋骨</td><td>紅</td></tr>
<tr><td>腹部第一肋骨</td><td>藍</td></tr>
<tr><td>腹部第二肋骨</td><td>綠</td></tr>
<tr><td>骨盆</td><td>橘</td></tr>
</table>
</td>
<td>以下方詳列之範圍黏貼紙膠帶。膠帶應徹底塗滿下列指定顏色，唯駕駛頭部僅於膠帶邊緣塗色，顏料應於接近試驗時間時塗上，以確保撞擊時顏料未乾。
駕駛
<table>
<tr><td>頭部（僅膠帶輪廓塗色）</td><td>紅</td></tr>
<tr><td>頭部重心（圓圈）</td><td>橘</td></tr>
<tr><td>肩部/手臂</td><td>藍</td></tr>
<tr><td>胸部第二肋骨</td><td>綠</td></tr>
<tr><td>胸部第三肋骨</td><td>紅</td></tr>
<tr><td>腹部第一肋骨</td><td>藍</td></tr>
<tr><td>腹部第二肋骨</td><td>綠</td></tr>
<tr><td>骨盆</td><td>橘</td></tr>
</table>
</td>
</tr>
<tr>
<td>3.1 Dummy Instrumentation
…
3.1.2…
(請參考末頁表格)</td>
<td>3.1 Dummy Instrumentation
…
3.1.2…
(請參考末頁表格)</td>
<td>3.3.3.1 人偶感測器及資料擷取系統設置
…
3.3.3.1.2 …
(請參考末頁表格)</td>
<td>3.3.3.1 人偶感測器及資料擷取系統設置
…
3.3.3.1.2 …
(請參考末頁表格)</td>
</tr>
<tr>
<td>4.1 Overview of Settings
(請參考末頁表格)</td>
<td>4.1 Overview of Settings
(請參考末頁表格)</td>
<td>3.3.4.1設定綜覽
(請參考末頁表格)</td>
<td>3.3.4.1設定綜覽
(請參考末頁表格)</td>
</tr>
<tr>
<td>5.2 Dummy Placement
5.2.1 It is the intention that the dummy</td>
<td>5.2 Dummy Placement
5.2.1 It is the intention that the dummy</td>
<td>3.3.5.2 人偶放置
3.3.5.2.1 試驗前，人偶不應直接坐在</td>
<td>3.3.5.2 人偶放置
3.3.5.2.1 試驗前，人偶不應直接坐在</td>
</tr>
</table>

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
should not be left to sit directly on the seat for more than 2 hours prior to the test. It is acceptable for the dummy to be left in the vehicle for a longer period, provided that the dummy is checked no more then one hour prior to test. It is not acceptable for the dummy to be left in the vehicle overnight or for a similarly lengthy period.	should not be left to sit directly on the seat for more than 2 hours prior to the test. It is acceptable for the dummy to be left in the vehicle for a longer period, provided that the dummy is not left in overnight or for a similarly lengthy period.	座椅上超過 2 小時。若試驗前 1 小時內檢查人偶定位，則允許人偶放置車內較長時間。不應將試驗人偶整晚留置車內或類似長度的時間。	座椅上超過 2 小時。可將人偶放置車內更久的時間，惟不應放置整晚或類似長度的時間。
	5.2.2 If it is known that the dummy will be in the vehicle for a time longer than 2 hours, then the dummy should be sat on plywood boards placed over the seat. This should eliminate unrealistic compression of the seat.		3.3.5.2.2 若已知人偶將放置車內超過 2 小時，則應於座椅上放置膠合板(Plywood board)，讓人偶坐在上面。如此應能避免座椅不符實際狀況地壓縮(Compression)。
5.2.2 If the vehicle has only two side doors, it may be necessary to fit the child restraint systems and child dummies (Section 5.3) before setting up the driver dummy in the front seat	5.2.3 If the vehicle has only two side doors, it may be necessary to fit the child restraint systems and child dummies (Section 5.3) before setting up the driver dummy in the front seat.	3.3.5.2.2 若車輛僅有兩扇側門，可能需先裝兒童保護裝置及兒童人偶（3.3.5.3），再於第一排座椅設置駕駛人偶。	3.3.5.2.3 若車輛僅有兩扇側門，可能需先裝兒童保護裝置及兒童人偶（3.3.5.3），再於第一排座椅設置駕駛人偶。
5.2.3 H-point	5.2.4 H-point	3.3.5.2.3 H 點	3.3.5.2.4 H 點
Note that the H-point of the WorldSID dummy is situated 20mm forward of that of the H-point determined by the H-point manikin.	Note that the H-point of the WorldSID dummy is situated 20mm forward of that of the H-point determined by the H-point manikin.	WorldSID 人偶的 H 點位於 H 點人體模型所決定之 H 點前方 20mm 處。	WorldSID 人偶的 H 點位於 H 點人體模型所決定之 H 點前方 20mm 處。
5.2.3.1 Using only the controls that move the	5.2.4.1 Using only the controls that move the	3.3.5.2.3.1 僅使用控制座椅前後移動	3.3.5.2.4.1 僅使用控制座椅前後移動

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
seat fore-aft, move the test seat to the rearmost position to facilitate placement of the dummy.	seat fore-aft, move the test seat to the rearmost position to facilitate placement of the dummy.	的控制器，將試驗座椅移至最後方的位置，方便放置人偶。	的控制器，將試驗座椅移至最後方的位置，方便放置人偶。
5.2.3.2 Position the dummy in the seat such that the mid-sagittal plane is coincident with the centreline markings and the upper torso resting against the seat back.	5.2.4.2 Position the dummy in the seat such that the mid-sagittal plane is coincident with the centreline markings and the upper torso resting against the seat back.	3.3.5.2.3.2 將人偶置於座椅上，使其正中矢狀切面(Mid-sagittal plane)對齊中線標記，並將上部軀幹靠在椅背上。	3.3.5.2.4.2 將人偶置於座椅上，使其正中矢狀切面(Mid-sagittal plane)對齊中線標記，並將上部軀幹靠在椅背上。
5.2.3.3 Apply a fore-aft and lateral rocking motion to settle the pelvis rearward in the seat.	5.2.4.3 Apply a fore-aft and lateral rocking motion to settle the pelvis rearward in the seat.	3.3.5.2.3.3 以前後及橫向搖晃動作，使骨盆向後貼合座椅。	3.3.5.2.4.3 以前後及橫向搖晃動作，使骨盆向後貼合座椅。
5.2.3.4 To ensure a repeatable and stable pelvis position, ensure that the pelvis is in contact with the seat cushion over the whole length.	5.2.4.4 To ensure a repeatable and stable pelvis position, ensure that the pelvis is in contact with the seat cushion over the whole length.	3.3.5.2.3.4 為確保可重複放置及固定之骨盆位置，確認整個骨盆與座墊確實接觸。	3.3.5.2.4.4 為確保可重複放置及固定之骨盆位置，確認整個骨盆與座墊確實接觸。
5.2.3.5 To ensure a repeatable placement of the lower abdominal rib, make sure it is inside the pelvis flesh and not on top of it.	5.2.4.5 To ensure a repeatable placement of the lower abdominal rib, make sure it is inside the pelvis flesh and not on top of it.	3.3.5.2.3.5 為確保下腹部肋骨可重複放置，確認肋骨位於骨盆腔(Pelvis flesh)內，而非骨盆腔上方。	3.3.5.2.4.5 為確保下腹部肋骨可重複放置，確認肋骨位於骨盆腔(Pelvis flesh)內，而非骨盆腔上方。
5.2.3.6 Move the seat together with the dummy to the test seat position defined in 4.4.9. If it is not possible to reach the seat test position due to knee contact, shift the targeted test seat position rearwards in the stepwise increments to the closest position where the knee clearance is at least 5mm. Modify the target H-point accordingly.	5.2.4.6 Move the seat together with the dummy to the test seat position defined in 4.4.9. If it is not possible to reach the seat test position due to knee contact, shift the targeted test seat position rearwards in the stepwise increments to the closest position where the knee clearance is at least 5mm. Modify the target H-point accordingly.	3.3.5.2.3.6 將座椅連同人偶移至 3.3.4.4.10 定義之試驗座椅位置。若因碰到膝部而無法移至該試驗座椅位置，則將目標試驗座椅位置逐步向後修改，直到膝部至少有 5mm 間隙為止，並依此修改目標 H 點。	3.3.5.2.4.6 將座椅連同人偶移至 3.3.4.4.10 定義之試驗座椅位置。若因碰到膝部而無法移至該試驗座椅位置，則將目標試驗座椅位置逐步向後修改，直到膝部至少有 5mm 間隙為止，並依此修改目標 H 點。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
5.2.3.7 Verify that the H-point is reasonably close (±10mm) to the target H-point 5.1.21 or as defined in 5.2.3.6 if the target H-point has been modified. If not, repeat step 5.2.3.3. If it is still not possible, record the rearmost seat cushion reference point and the dummy H-point and proceed to the next step.	5.2.4.7 Verify that the H-point is reasonably close (±10mm) to the target H-point 5.1.21 or as defined in 5.2.4.6 if the target H-point has been modified. If not, repeat step 5.2.4.3. If it is still not possible, record the rearmost seat cushion reference point and the dummy H-point and proceed to the next step.	3.3.5.2.3.7 確認 H 點相當接近（±10mm）3.3.5.1.21 之目標 H 點，若目標 H 點已修改，則依 3.3.5.2.3.6 定義。否則，重複步驟 3.3.5.2.3.3。若仍無法符合，則記錄最後方座墊參考點及人偶 H 點，接著進行下個步驟。	3.3.5.2.4.7 確認 H 點相當接近（±10mm）3.3.5.1.21 之目標 H 點，若目標 H 點已修改，則依 3.3.5.2.4.6 定義。否則，重複步驟 3.3.5.2.4.3。若仍無法符合，則記錄最後方座墊參考點及人偶 H 點，接著進行下個步驟。
5.2.3.8 Extend the right leg without displacing the thigh from the seat cushion. Allow the sole of the foot to settle on the accelerator pedal; the heel of the shoe should be in contact with the floor pan. Where a lack of ankle articulation prevents the foot from sitting flat on the accelerator pedal, keep the foot at a 90 degree angle to the tibia and ensure that the heel is in contact with the floor.	5.2.4.8 Extend the right leg without displacing the thigh from the seat cushion. Allow the sole of the foot to settle on the accelerator pedal; the heel of the shoe should be in contact with the floor pan. Where a lack of ankle articulation prevents the foot from sitting flat on the accelerator pedal, keep the foot at a 90 degree angle to the tibia and ensure that the heel is in contact with the floor.	3.3.5.2.3.8 在不移動座墊上大腿之情況下，伸展右腿並使鞋底平放於加速踏板上，鞋跟應接觸地板平底處(Floor pan)。若沒有踝關節，導致足部無法平放於加速踏板上，則使足部與脛骨呈 90 度，並確保鞋跟與地板接觸。	3.3.5.2.4.8 在不移動座墊上大腿之情況下，伸展右腿並使鞋底平放於加速踏板上，鞋跟應接觸地板平底處(Floor pan)。若沒有踝關節，導致足部無法平放於加速踏板上，則使足部與脛骨呈 90 度，並確保鞋跟與地板接觸。
5.2.3.9 Extend the left leg without lifting the thigh from the seat cushion and allow the sole of the foot to settle on the footrest or floor if no footrest is present. The heel of the shoe should be in contact with the floor. In case of tibia contact, slide the foot rearward toward the seat until a 5mm	5.2.4.9 Extend the left leg without lifting the thigh from the seat cushion and allow the sole of the foot to settle on the footrest or floor if no footrest is present. The heel of the shoe should be in contact with the floor. In case of tibia contact, slide the foot rearward toward the seat until a 5mm	3.3.5.2.3.9 在不移動座墊上大腿之情況下，伸展左腿並使鞋底平放於置腳板(Footrest)或地板（若未配備置腳板）上，鞋跟應接觸地板。若碰到脛骨，則將足部向後朝座椅移動，直到有 5mm 的間隙。若沒有踝關節，導致足部無法平放於地板	3.3.5.2.4.9 在不移動座墊上大腿之情況下，伸展左腿並使鞋底平放於置腳板(Footrest)或地板（若未配備置腳板）上，鞋跟應接觸地板。若碰到脛骨，則將足部向後朝座椅移動，直到有 5mm 的間隙。若沒有踝關節，導致足部無法平放於地板

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
clearance is obtained. Where a lack of ankle articulation prevents the foot from sitting flat on the floor, keep the foot at a 90 degree angle to the tibia and ensure that the heel is in contact with the floor.	clearance is obtained. Where a lack of ankle articulation prevents the foot from sitting flat on the floor, keep the foot at a 90 degree angle to the tibia and ensure that the heel is in contact with the floor.	上，則使足部與脛骨呈 90 度，並確保鞋跟與地板接觸。	上，則使足部與脛骨呈 90 度，並確保鞋跟與地板接觸。
5.2.3.10 Position the H-point of the dummy to match the WorldSID H-point coordinates recorded following Section 5.1 to within ±10mm. Prioritise the X coordinate.	5.2.4.10 Position the H-point of the dummy to match the WorldSID H-point coordinates recorded following Section 5.1 to within ±10mm. Prioritise the X coordinate.	3.3.5.2.3.10 調整人偶 H 點，以符合依 3.3.5.1 紀錄之 WorldSID H 點座標（容許誤差±10mm），以 X 座標為優先。	3.3.5.2.4.10 調整人偶 H 點，以符合依 3.3.5.1 紀錄之 WorldSID H 點座標（容許誤差±10mm），以 X 座標為優先。
5.2.4 Head and torso	5.2.5 Head and torso	3.3.5.2.4 頭部及軀幹	3.3.5.2.5 頭部及軀幹
5.2.4.1 Adjust the dummy until the thorax tilt sensor coincides with the angle specified by the manufacturer.	5.2.5.1 Adjust the dummy until the thorax tilt sensor coincides with the angle specified by the manufacturer.	3.3.5.2.4.1 調整人偶，使胸部傾斜感測器符合車輛業者宣告之角度。	3.3.5.2.5.1 調整人偶，使胸部傾斜感測器符合車輛業者宣告之角度。
5.2.4.2 If the rib angle is not specified by the manufacturer and the seat back is 23° ± 1°, adjust the dummy until the thorax tilt sensor reads −2° (2° downwards) ± 1°.	5.2.5.2 If the rib angle is not specified by the manufacturer and the seat back is 23° ± 1°, adjust the dummy until the thorax tilt sensor reads −2° (2° downwards) ± 1°.	3.3.5.2.4.2 若車輛業者未宣告肋骨角度且椅背角度為 23 ± 1 度，則調整人偶，使其胸部感測器讀數為−2 度（朝下 2 度）± 1 度。	3.3.5.2.5.2 若車輛業者未宣告肋骨角度且椅背角度為 23 ± 1 度，則調整人偶，使其胸部感測器讀數為−2 度（朝下 2 度）± 1 度。
5.2.4.3 If no rib angle is specified and the seat back angle is not 23° ± 1°, no further adjustment of rib angle is required.	5.2.5.3 If no rib angle is specified and the seat back angle is not 23° ± 1°, no further adjustment of rib angle is required.	3.3.5.2.4.3 若未宣告肋骨角度且椅背角度非為 23 度±1 度，則無須再調整肋骨角度。	3.3.5.2.5.3 若未宣告肋骨角度且椅背角度非為 23 度±1 度，則無須再調整肋骨角度。
5.2.4.4 Adjust the dummy neck bracket to level the head at the closest position to 0° ± 1°.	5.2.5.4 Adjust the dummy neck bracket to level the head at the closest position to 0° ± 1°.	3.3.5.2.4.4 調整人偶頸套 (Neck bracket)，使頭部水平盡可能接近 0± 1 度。	3.3.5.2.5.4 調整人偶頸套 (Neck bracket)，使頭部水平盡可能接近 0± 1 度。
5.2.5 Legs and feet	5.2.6 Legs and feet	3.3.5.2.5 腿部及足部	3.3.5.2.6 腿部及足部
5.2.5.1 Proceed to the final foot and leg	5.2.6.1 Proceed to the final foot and leg	3.3.5.2.5.1 重複 3.3.5.1.7 及 3.3.5.1.8，	3.3.5.2.6.1 重複 3.3.5.1.7 及 3.3.5.1.8，

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
positioning by repeating Section 5.1.7 and 5.1.8. Where a lack of ankle articulation prevents the foot from sitting flat on the accelerator pedal/floor, keep the foot at a 90 degree angle to the tibia and ensure that the heel is as far forward as possible and in contact with the floor.	positioning by repeating Section 5.1.7 and 5.1.8. Where a lack of ankle articulation prevents the foot from sitting flat on the accelerator pedal/floor, keep the foot at a 90 degree angle to the tibia and ensure that the heel is as far forward as possible and in contact with the floor.	進行最後的足部及腿部位置調整。若沒有踝關節，導致足部無法平放於加速踏板/地板上，則使足部與脛骨呈 90 度，並確保鞋跟盡可能向前移且與地板接觸。	進行最後的足部及腿部位置調整。若沒有踝關節，導致足部無法平放於加速踏板/地板上，則使足部與脛骨呈 90 度，並確保鞋跟盡可能向前移且與地板接觸。
5.2.5.2 No distance is specified for the knee spacing. However, priority should be given to ensure the following:	5.2.6.2 No distance is specified for the knee spacing. However, priority should be given to ensure the following:	3.3.5.2.5.2 膝部間隔距離並未規定，惟應優先考量下列條件：	3.3.5.2.6.2 膝部間隔距離並未規定，惟應優先考量下列條件：
5.2.5.3 There is 5 mm clearance between the knees/legs and the steering shroud and centre console.	5.2.6.3 There is 5 mm clearance between the knees/legs and the steering shroud and centre console.	3.3.5.2.5.3 膝部/腿部距轉向機柱護蓋(Steering shroud)與中控台(Centre console)有 5mm 的間隙。	3.3.5.2.6.3 膝部/腿部距轉向機柱護蓋(Steering shroud)與中控台(Centre console)有 5mm 的間隙。
5.2.5.4 There is a stable foot and ankle position.	5.2.6.4 There is a stable foot and ankle position.	3.3.5.2.5.4 足部及腳踝位置穩定。	3.3.5.2.6.4 足部及腳踝位置穩定。
5.2.5.5 The legs are as parallel as possible to the sagittal plane.	5.2.6.5 The legs are as parallel as possible to the sagittal plane.	3.3.5.2.5.5 雙腿盡可能與矢狀切面平行。	3.3.5.2.6.5 雙腿盡可能與矢狀切面平行。
5.2.6 Arms	5.2.7 Arms	3.3.5.2.6 手臂	3.3.5.2.7 手臂
5.2.6.1 Place both arms at the first detent downward of the most upward detent that corresponds to a differential angle of 32° between rib angle sensor and the arm angle.	5.2.7.1 Place both arms at the first detent downward of the most upward detent that corresponds to a differential angle of 32° between rib angle sensor and the arm angle.	3.3.5.2.6.1 肋骨角度感測器與手臂角度之水平夾角(Differential angle)須達 32 度，將雙臂置於由上往下第一個符合此要求之鎖定位置(Detent)。	3.3.5.2.7.1 肋骨角度感測器與手臂角度之水平夾角(Differential angle)須達 32 度，將雙臂置於由上往下第一個符合此要求之鎖定位置(Detent)。
5.2.7 Seat belt	5.2.8 Seat belt	3.3.5.2.7 安全帶	3.3.5.2.8 安全帶
5.2.7.1 Where possible, initially position the upper seat belt anchorage in the	5.2.8.1 Where possible, initially position the upper seat belt anchorage in the	3.3.5.2.7.1 依實際狀況，先將安全帶上部固定器調整至車輛業者第 50 百分	3.3.5.2.8.1 依實際狀況，先將安全帶上部固定器調整至車輛業者第 50 百分

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
manufacturers 50th percentile design position. If no design position is provided, set the adjustable upper seat belt anchorage to the mid-position or nearest notch upward.	manufacturers 50th percentile design position. If no design position is provided, set the adjustable upper seat belt anchorage to the mid-position or nearest notch upward.	位設計位置。若未提供設計位置，則將可調整的安全帶上部固定器設於中間位置或向上最接近的段位。	位設計位置。若未提供設計位置，則將可調整的安全帶上部固定器設於中間位置或向上最接近的段位。
5.2.7.2 Carefully place the seat belt across the dummy and lock as normal.	5.2.8.2 Carefully place the seat belt across the dummy and lock as normal.	3.3.5.2.7.2 將安全帶小心圍繞試驗人偶，並正常扣上。	3.3.5.2.8.2 將安全帶小心圍繞試驗人偶，並正常扣上。
5.2.7.3 Remove the slack from the lap section of the webbing until it is resting gently around the pelvis of the dummy. Only minimal force should be applied to the webbing when removing the slack. The route of the lap belt should be as natural as possible.	5.2.8.3 Remove the slack from the lap section of the webbing until it is resting gently around the pelvis of the dummy. Only minimal force should be applied to the webbing when removing the slack. The route of the lap belt should be as natural as possible.	3.3.5.2.7.3 消除腰部織帶鬆弛，直到織帶輕輕繞過貼合人偶骨盆周圍。消除織帶鬆弛部分時，應盡可能使用最小的力道。腰部安全帶(Lap belt)路徑應盡可能平順自然。	3.3.5.2.8.3 消除腰部織帶鬆弛，直到織帶輕輕繞過貼合人偶骨盆周圍。消除織帶鬆弛部分時，應盡可能使用最小的力道。腰部安全帶(Lap belt)路徑應盡可能平順自然。
5.2.7.4 Place one finger behind the diagonal section of the webbing at the height of the dummy sternum. Pull the webbing away from the chest horizontally forward and allow it to retract in the direction of the D-loop using only the force provided by the retractor mechanism. Repeat this step three times, only.	5.2.8.4 Place one finger behind the diagonal section of the webbing at the height of the dummy sternum. Pull the webbing away from the chest horizontally forward and allow it to retract in the direction of the D-loop using only the force provided by the retractor mechanism. Repeat this step three times, only.	3.3.5.2.7.4 將一隻手指置於織帶對角線部位後方且人偶胸骨高度處。將織帶水平往前拉，遠離胸部，並讓織帶僅依捲收器機構的力道向導帶環(D-loop)方向捲收。重複此步驟三次。	3.3.5.2.8.4 將一隻手指置於織帶對角線部位後方且人偶胸骨高度處。將織帶水平往前拉，遠離胸部，並讓織帶僅依捲收器機構的力道向導帶環(D-loop)方向捲收。重複此步驟三次。
5.2.7.5 After following the above steps, the seatbelt should lie in a natural position across the dummy sternum and shoulder clavicle. Where this is not the case, for	5.2.8.5 After following the above steps, the seatbelt should lie in a natural position across the dummy sternum and shoulder clavicle. Where this is not the case, for	3.3.5.2.7.5 依上述步驟執行後，安全帶應圍繞人偶胸骨及肩部鎖骨，處於自然位置。若情況並非如此，例如安全帶接近或接觸頸部，或位於	3.3.5.2.8.5 依上述步驟執行後，安全帶應圍繞人偶胸骨及肩部鎖骨，處於自然位置。若情況並非如此，例如安全帶接近或接觸頸部，或位於

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
example the belt is close to or in contact with the neck or the belt is above the shoulder rotation adjustment screw, and the upper belt anchorage is adjustable the anchorage should be lowered and steps 5.2.7.3 and 5.2.7.4 repeated.	example the belt is close to or in contact with the neck or the belt is above the shoulder rotation adjustment screw, and the upper belt anchorage is adjustable the anchorage should be lowered and steps 5.2.8.3 and 5.2.8.4 repeated.	肩部旋轉調整螺絲上，而安全帶上部固定器可以調整，則應降低該固定器，並重複步驟 3.3.5.2.7.3 及 3.3.5.2.7.4。	肩部旋轉調整螺絲上，而安全帶上部固定器可以調整，則應降低該固定器，並重複步驟 3.3.5.2.8.3 及 3.3.5.2.8.4。
5.2.7.6 The upper anchorage should be lowered by a sufficient amount to ensure a natural belt position following the repetition of steps 5.2.7.3 and 5.2.7.4. This may require multiple attempts.	5.2.8.6 The upper anchorage should be lowered by a sufficient amount to ensure a natural belt position following the repetition of steps 5.2.8.3 and 5.2.8.4. This may require multiple attempts.	3.3.5.2.7.6 重複步驟 3.3.5.2.7.3 及 3.3.5.2.7.4 後，上部固定器應降至合適高度，足以確保安全帶處於自然位置。這可能須要多次嘗試。	3.3.5.2.8.6 重複步驟 3.3.5.2.8.3 及 3.3.5.2.8.4 後，上部固定器應降至合適高度，足以確保安全帶處於自然位置。這可能須要多次嘗試。
5.2.7.7 Once the belt is positioned the location of the belt should be marked across the dummy chest to ensure that no further adjustments are made. Mark also the belt at the level of the D-loop to be sure that the initial tension is maintained during test preparation.	5.2.8.7 Once the belt is positioned the location of the belt should be marked across the dummy chest to ensure that no further adjustments are made. Mark also the belt at the level of the D-loop to be sure that the initial tension is maintained during test preparation.	3.3.5.2.7.7 安全帶位置調整好後，應於試驗人偶胸部標記安全帶位置，以確保不再有調整。同時，在安全帶上於導帶環高度處標記，以利於試驗準備期間維持初始張力。	3.3.5.2.8.7 安全帶位置調整好後，應於試驗人偶胸部標記安全帶位置，以確保不再有調整。同時，在安全帶上於導帶環高度處標記，以利於試驗準備期間維持初始張力。
5.2.7.8 Measure the vertical distance between the dummy nose and the diagonal webbing.	5.2.8.8 Measure the vertical distance between the dummy nose and the diagonal webbing.	3.3.5.2.7.8 測量人偶鼻子與對角式織帶的垂直距離。	3.3.5.2.8.8 測量人偶鼻子與對角式織帶的垂直距離。
5.2.7.9 Measure the horizontal distance between the diagonal webbing and the door/window.	5.2.8.9 Measure the horizontal distance between the diagonal webbing and the door/window.	3.3.5.2.7.9 測量對角式織帶與車門/車窗的水平距離。	3.3.5.2.8.9 測量對角式織帶與車門/車窗的水平距離。
5.2.8 After positioning the dummy measure and record the dummy position according to	5.2.9 After positioning the dummy measure and record the dummy position according to	3.3.5.2.8 人偶位置調整好後，依照 3.3.5.4 進行量測並記錄人偶位置，	3.3.5.2.9 人偶位置調整好後，依照 3.3.5.4 進行量測並記錄人偶位置，

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
Section 6.4 and determine the impact location as described in Section 1.4.	Section 6.4 and determine the impact location as described in Section 1.4.	再依 3.3.1.3 所述決定撞擊位置。	再依 3.3.1.3 所述決定撞擊位置。

2019年Euro NCAP規章

3.1.2

Location	Parameter	Minimum amplitude	Channel count
Head	Linear acceleration, Ax, Ay, Az	250g	3
Upper neck	Forces and moments Fx, Fy, Fz, Mx, My, Mz	5kN, 300Nm	6
Shoulder – Joint	Forces, Fx, Fy, Fz	8kN	3
Shoulder – Rib	Displacement & rotation	100mm	2
Thorax - Upper rib	Displacement & rotation	100mm	2
Thorax - Mid rib	Displacement & rotation	100mm	2
Thorax - Lower rib	Displacement & rotation	100mm	2
Thoracic temperature*	Temperature, see 2.5.1.3	30°C	1
Abdomen - Upper rib	Displacement & rotation	100mm	2
Abdomen - Lower rib	Displacement & rotation	100mm	2
Spine - T12	Acceleration, Ax, Ay, Az	200g	3
Pelvis	Acceleration, Ax, Ay, Az	200g	3
Pelvis – Pubic	Force	5kN	1
Femoral neck – struck side only	Force, Fx, Fy, Fz	5kN	3
	Total Channels		**35**

2017年Euro NCAP規章

3.1.2

Location	Parameter	Minimum amplitude	Channel count
Head	Linear acceleration, Ax, Ay, Az	250g	3
Upper neck	Forces and moments Fx, Fy, Fz, Mx, My, Mz	5kN, 300Nm	6
Shoulder – Joint	Forces, Fx, Fy, Fz	8kN	3
Shoulder – Rib 2d IR Tracc	Displacement & rotation	100mm	2
Thorax - Upper rib 2d IR Tracc	Displacement & rotation	100mm	2
Thorax - Mid rib 2d IR Tracc	Displacement & rotation	100mm	2
Thorax - Lower rib 2d IR Tracc	Displacement & rotation	100mm	2
Thoracic temperature*	Temperature, see 2.5.1.3	30°C	1
Abdomen - Upper rib 2d IR Tracc	Displacement & rotation	100mm	2
Abdomen - Lower rib 2d IR Tracc	Displacement & rotation	100mm	2
Spine - T12	Acceleration, Ax, Ay, Az	200g	3
Pelvis	Acceleration, Ax, Ay, Az	200g	3
Pelvis – Pubic	Force	5kN	1
Femoral neck – struck side only	Force, Fx, Fy, Fz	5kN	3
	Total Channels		**35**

修訂 TNCAP 條文草案	對應 TNCAP 條文

3.3.3.1.2

位置	參數	最低振幅	頻道數量
頭部	線性加速度(Linear acceleration)，A_x、A_y、A_z	250g	3
上頸部	力與力矩 F_x、F_y、F_z，M_x、M_y、M_z	5kN, 300Nm	6
肩部－關節	力，F_x、F_y、F_z	8kN	3
肩部－肋骨	位移及旋轉	100mm	2
胸部－上肋骨	位移及旋轉	100mm	2
胸部－中肋骨	位移及旋轉	100mm	2
胸部－下肋骨	位移及旋轉	100mm	2
胸部溫度*	溫度，如 3.3.2.5.1.3	30℃	1
腹部－上肋骨	位移及旋轉	100mm	2
腹部－下肋骨	位移及旋轉	100mm	2
脊椎- T12	加速度，A_x、A_y、A_z	200g	3
骨盆	加速度，A_x、A_y、A_z	200g	3
骨盆– 恥骨	力	5kN	1
股骨頸－僅撞擊側	力，F_x、F_y、F_z	5kN	3
	頻道總數		**35**

3.3.3.1.2

位置	參數	最低振幅	頻道數量
頭部	線性加速度(Linear acceleration)，A_x、A_y、A_z	250g	3
上頸部	力與力矩 F_x、F_y、F_z，M_x、M_y、M_z	5kN, 300Nm	6
肩部－關節	力，F_x、F_y、F_z	8kN	3
肩部－肋骨 2d IR Tracc	位移及旋轉	100mm	2
胸部－上肋骨 2d IR Tracc	位移及旋轉	100mm	2
胸部－中肋骨 2d IR Tracc	位移及旋轉	100mm	2
胸部－下肋骨 2d IR Tracc	位移及旋轉	100mm	2
胸部溫度*	溫度，如 3.3.2.5.1.3	30℃	1
腹部－上肋骨 2d IR Tracc	位移及旋轉	100mm	2
腹部－下肋骨 2d IR Tracc	位移及旋轉	100mm	2
脊椎- T12	加速度，A_x、A_y、A_z	200g	3
骨盆	加速度，A_x、A_y、A_z	200g	3
骨盆– 恥骨	力	5kN	1
股骨頸－僅撞擊側	力，F_x、F_y、F_z	5kN	3
	頻道總數		**35**

2019年Euro NCAP規章	2017年Euro NCAP規章

4.1 Overview of Settings

Adjustment	Required Setting	Notes	Methods
Seat fore/aft	As defined in 4.4		
Seat base tilt	As defined in 4.4		
Seat height	As defined in 4.4		
Torso angle	Manufacturer's design position	Otherwise 23° to Vertical	See Section 5.1
Seat lumbar support	Fully retracted		See Section 4.2
Front head restraint height & tilt	Mid locking position	As whiplash test position. If there is any interference with the rear of the dummy head, move the HR to the most rearward position.	See Section 6.2 Whiplash testing protocol.
Front seat belt anchorage (where adjustable)	Initially, manufacturer's 50th percentile design position	If no design position then set to mid position, or nearest notch upwards	See Section 5.2.7
Steering wheel	Highest position and most outward		See Section 0
Rear seat fore/aft (where adjustable)	Manufacturer's design position	Where no details are provided in the handbook, set to mid	See Section 4.6
Rear seat back angle (where adjustable)	Manufacturer's design position	Otherwise 25° to Vertical	See Section 4.6
Rear seat facing	Forwards		
Rear head restraint height & tilt	As recommended in vehicle handbook.	Where no details are provided in the handbook, set to mid or next lowest position for height and mid locking position for tilt. Must not interfere with child/CRS installation	See Section 6.2 Whiplash testing protocol.
Rear seat belt anchorage (where adjustable)	As recommended in vehicle handbook for CRS installation.	If no recommendation then set to mid-position, or nearest notch upwards. MUST be same as ODB	
Arm-rests (Front seats)	Lowered position	May be left up if dummy positioning does not allow lowering. Where adjustable place in horizontal position	
Arm-rests (Rear seats)	Stowed position		
Side window glazing	All raised		
Gear change lever	In the neutral position		
Parking brake	Engaged		
Pedals	Normal position of rest	Adjustable pedals fully forward	See Section 4.2
Doors	Closed, not locked		
Roof / sunroof	Raised / fully closed	Where applicable	
Sun visors	Stowed position		
Rear view mirror	Normal position of use		

(查項次異動並不影響方向盤設定對應章節(4.5節)，故研判此處Section 0為誤植)

4.1 Overview of Settings

Adjustment	Required Setting	Notes	Methods
Seat fore/aft	As defined in 4.4		
Seat base tilt	As defined in 4.4		
Seat height	As defined in 4.4		
Torso angle	Manufacturer's design position	Otherwise 23° to Vertical	See Section 5.1
Seat lumbar support	Fully retracted		See Section 4.2
Front head restraint height & tilt	Mid locking position	As whiplash test position. If there is any interference with the rear of the dummy head, move the HR to the most rearward position.	See Section 6.2 Whiplash testing protocol.
Front seat belt anchorage (where adjustable)	Initially, manufacturer's 50th percentile design position	If no design position then set to mid position, or nearest notch upwards	See Section 5.2.8
Steering wheel	Highest position and most outward		See Section 4.5
Rear seat fore/aft (where adjustable)	Manufacturer's design position	Where no details are provided in the handbook, set to mid	See Section 4.6
Rear seat back angle (where adjustable)	Manufacturer's design position	Otherwise 25° to Vertical	See Section 4.6
Rear seat facing	Forwards		
Rear head restraint height & tilt	As recommended in vehicle handbook.	Where no details are provided in the handbook, set to mid or next lowest position for height and mid locking position for tilt. Must not interfere with child/CRS installation	See Section 6.2 Whiplash testing protocol.
Rear seat belt anchorage (where adjustable)	As recommended in vehicle handbook for CRS installation.	If no recommendation then set to mid-position, or nearest notch upwards. MUST be same as ODB	
Arm-rests (Front seats)	Lowered position	May be left up if dummy positioning does not allow lowering. Where adjustable place in horizontal position	
Arm-rests (Rear seats)	Stowed position		
Side window glazing	All raised		
Gear change lever	In the neutral position		
Parking brake	Engaged		
Pedals	Normal position of rest	Adjustable pedals fully forward	See Section 4.2
Doors	Closed, not locked		
Roof / sunroof	Raised / fully closed	Where applicable	
Sun visors	Stowed position		
Rear view mirror	Normal position of use		

修訂 TNCAP 條文草案	對應 TNCAP 條文

3.3.4.1設定綜覽

調整	設定要求	附註	做法
座椅前後位置	如 3.3.4.4 定義		
座椅底座傾斜度	如 3.3.4.4 定義		
座椅高度	如 3.3.4.4 定義		
軀幹角度	車輛業者之設計位置	否則為垂直向後傾斜 23 度	如 3.3.5.1
座椅腰部支撐	完全縮回		如 3.3.4.2
第一排座椅頭枕高度及傾斜度	中間鎖定位置	同鞭甩試驗位置。頭枕若會影響人偶頭部後方，則將頭枕移至最後方的位置。	如「前座鞭甩試驗規章」3.5.5.2
前座安全帶固定裝置（若可調整）	初始為車輛業者之第 50 百分位設計位置	若無設計位置，則調整至中間位置或至向上最接近的段位	如 3.3.5.2.7
方向盤	最高且最向後（靠人偶）的位置		如 3.3.4.5

3.3.4.1設定綜覽

調整	設定要求	附註	做法
座椅前後位置	如 3.3.4.4 定義		
座椅底座傾斜度	如 3.3.4.4 定義		
座椅高度	如 3.3.4.4 定義		
軀幹角度	車輛業者之設計位置	否則為垂直向後傾斜 23 度	如 3.3.5.1
座椅腰部支撐	完全縮回		如 3.3.4.2
第一排座椅頭枕高度及傾斜度	中間鎖定位置	同鞭甩試驗位置。頭枕若會影響人偶頭部後方，則將頭枕移至最後方的位置。	如「前座鞭甩試驗規章」3.5.5.2
前座安全帶固定裝置（若可調整）	初始為車輛業者之第 50 百分位設計位置	若無設計位置，則調整至中間位置或至向上最接近的段位	如 3.3.5.2.8
方向盤	最高且最向後（靠人偶）的位置		如 3.3.4.5

後座前後位置（若可調整）	車輛業者之設計位置	手冊若未提供相關資訊，則調至中間位置	如 3.3.4.6
後座椅背角度（若可調整）	車輛業者之設計位置	否則為垂直向後傾斜 25 度	如 3.3.4.6
後座方向	朝前		
後座頭枕高度及傾斜度	如車主手冊建議	手冊若未提供相關資訊，則將高度調整至中間或向下最接近的位置，將傾斜度調整至中間鎖定位置。不可影響兒童/兒童保護裝置安裝。	如「前座鞭甩試驗規章」3.5.5.2
後座安全帶固定裝置（若可調整）	如車主手冊對於兒童保護裝置安裝之建議。	若無建議，則調整至中間位置或至向上最接近的段位，須與偏置撞擊之位置相同	
扶手（第一排座椅）	使用位置	若人偶放置後扶手無法位於使用位置，則可保持於非使用位置。於水平位置可調整處。	
扶手（後座）	收納位置		
車窗	全部升起		
變速箱	空檔		
駐煞車	致動(Engaged)		

後座前後位置（若可調整）	車輛業者之設計位置	手冊若未提供相關資訊，則調至中間位置	如 3.3.4.6
後座椅背角度（若可調整）	車輛業者之設計位置	否則為垂直向後傾斜 25 度	如 3.3.4.6
後座方向	朝前		
後座頭枕高度及傾斜度	如車主手冊建議	手冊若未提供相關資訊，則將高度調整至中間或向下最接近的位置，將傾斜度調整至中間鎖定位置。不可影響兒童/兒童保護裝置安裝。	如「前座鞭甩試驗規章」3.5.5.2
後座安全帶固定裝置（若可調整）	如車主手冊對於兒童保護裝置安裝之建議。	若無建議，則調整至中間位置或至向上最接近的段位，須與偏置撞擊之位置相同	
扶手（第一排座椅）	使用位置	若人偶放置後扶手無法位於使用位置，則可保持於非使用位置。於水平位置可調整處。	
扶手（後座）	收納位置		
車窗	全部升起		
變速箱	空檔		
駐煞車	致動(Engaged)		

踏板	未踩踏之正常位置(Position of rest)	可調整式踏板設於完全向前的位置	如 3.3.4.2
車門	關閉但不上鎖		
車頂/天窗	升起/完全關閉	依實際狀況	
遮陽板	收合位置		
照後鏡	正常使用位置		

踏板	未踩踏之正常位置(Position of rest)	可調整式踏板設於完全向前的位置	如 3.3.4.2
車門	關閉但不上鎖		
車頂/天窗	升起/完全關閉	依實際狀況	
遮陽板	收合位置		
照後鏡	正常使用位置		

OBLIQUE POLE SIDE IMPACT TESTING PROTOCOL 3.4側方立柱撞擊試驗規章

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
1.5 Vehicle Preparation … 1.5.9 For fully electric vehicles, if a total vehicle mass within 25kg of the reference mass cannot be achieved, it is acceptable for the total mass to be within 2% of the reference mass. A heavier test mass may be used with the agreement of the OEM, the test mass must not be below the minimum value of the specified tolerances.	**1.5 Vehicle Preparation** … 1.5.9 For fully electric vehicles, if a total vehicle mass within 25kg of the reference mass cannot be achieved, it is acceptable for the total mass to be within 2% of the reference mass.	3.4.1.5 車輛整備 … 3.4.1.5.9 對於純電動車輛，若車輛總重量與參考車重之差異無法小於25kg，則總重量與參考車重之差異應在 2%以內。經車輛業者同意，可使用較重之重量進行試驗，惟試驗重量不得低於宣告容許誤差之最小值。	3.4.1.5 車輛整備 … 3.4.1.5.9 對於純電動車輛，若車輛總重量與參考車重之差異無法小於25kg，則總重量與參考車重之差異應在 2%以內。
2 DUMMY PREPARATION AND CERTIFICATION 2.1 General 2.1.1 A WorldSID 50th percentile male test dummy shall be used in the front driver's position. It shall conform to the specification detailed in ISO 15830, parts 1-5.	**2 DUMMY PREPARATION AND CERTIFICATION** 2.1 General 2.1.1 A WorldSID 50th percentile male test dummy shall be used in the front driver's position. It shall conform to the specficiation detailed in ISO 15830, parts 1-4, May 2013 and the revisions documented in WG5 N1041, revision 3, dated 11th February 2014.	3.4.2 人偶整備及查驗(Certification) 3.4.2.1 通則 3.4.2.1.1WorldSID 百分之五０成年男性試驗人偶應安裝於駕駛座，該人偶應符合 2013 年 5 月 ISO 15830 第 1 至 5 部詳列之規格。	3.4.2 人偶整備及查驗(Certification) 3.4.2.1 通則 3.4.2.1.1WorldSID 百分之五０成年男性試驗人偶應安裝於駕駛座，該人偶應符合 2013 年 5 月 ISO 15830 第 1 至 4 部分詳列之規格，並符合 2014 年 2 月 11 日 WG5 N1041 第三次修訂之修訂條文。
2.4 Dummy Clothing and Footwear 2.4.1 The dummy shall be clothed in a sleeveless suit or a modified version of the sleeved suit with sleeves removed.	**2.4 Dummy Clothing and Footwear** 2.4.1 The clothing shall conform to clothing assembly drawing W50-80100.pdf (see Annex C of ISO 15830) and the	3.4.2.4 人偶衣著及鞋履 3.4.2.4.1 人偶應穿著無袖上衣或改良版可移除衣袖式上衣。	3.4.2.4 人偶衣著及鞋履 3.4.2.4.1 衣著應符合衣著裝配圖 W50-80100.pdf（參見 ISO 15830 附件 C），及其內附之次裝配與組件圖

<table>
<tr><th>2019 年版 Euro NCAP 規章</th><th>2017 年版 Euro NCAP 規章</th><th>修訂 TNCAP 條文草案</th><th>對應 TNCAP 條文</th></tr>
<tr><td></td><td>subassemblies and component drawings listed therein.</td><td></td><td>示。</td></tr>
<tr><td>2.6 Dummy painting
2.6.1 The dummy shall have masking tape placed on the areas to be painted using the sizes detailed below. The tape should be completely covered with the following coloured paints. The paint should be applied close to the time of the test to ensure that the paint will still be wet on impact.
Driver
<table><tr><td>Head(Paint tape outline)</td><td>Red</td></tr><tr><td>Head CoG(circle Ø40mm)</td><td>Yellow</td></tr><tr><td>Head top along mid sagittal plane</td><td>Green</td></tr><tr><td>Shoulder /Arm</td><td>Blue</td></tr><tr><td>2nd Thorax Rib</td><td>Green</td></tr><tr><td>3rd Thorax Rib</td><td>Red</td></tr><tr><td>1st Abdoment Rib</td><td>Blue</td></tr><tr><td>2nd Abdoment Rib</td><td>Green</td></tr><tr><td>Pelvis</td><td>Orange</td></tr></table></td><td>2.6 Dummy painting
2.6.1 The dummy shall have masking tape placed on the areas to be painted using the sizes detailed below. The tape should be completely covered with the following coloured paints. The paint should be applied close to the time of the test to ensure that the paint will still be wet on impact.
Driver
<table><tr><td>Head(Paint tape outline)</td><td>Red</td></tr><tr><td>Head CoG(circle)</td><td>Yellow</td></tr><tr><td>Shoulder /Arm</td><td>Blue</td></tr><tr><td>2nd Thorax Rib</td><td>Green</td></tr><tr><td>3rd Thorax Rib</td><td>Red</td></tr><tr><td>1st Abdoment Rib</td><td>Blue</td></tr><tr><td>2nd Abdoment Rib</td><td>Green</td></tr><tr><td>Pelvis</td><td>Orange</td></tr></table></td><td>3.4.2.6 人偶塗色
3.4.2.6.1 應於人偶預定塗色之區域，以下方詳列之範圍黏貼紙膠帶。膠帶應徹底塗滿下列指定顏色，唯駕駛頭部僅於膠帶邊緣塗色，顏料應於接近試驗時間時塗上，以確保撞擊時顏料未乾。

駕駛
頭部（僅膠帶輪廓塗色） 紅
頭部重心（圓圈直徑40mm） 黃
頭頂沿正中矢狀切面 綠
肩部/手臂 藍
胸部第二肋骨 綠
胸部第三肋骨 紅
腹部第一肋骨 藍
腹部第二肋骨 綠
骨盆 橘</td><td>3.4.2.6 人偶塗色
3.4.2.6.1 應於人偶預定塗色之區域，以下方詳列之範圍黏貼紙膠帶。膠帶應徹底塗滿下列指定顏色，唯駕駛頭部僅於膠帶邊緣塗色，顏料應於接近試驗時間時塗上，以確保撞擊時顏料未乾。

駕駛
頭部（僅膠帶輪廓塗色） 紅
頭部重心（圓圈） 黃
肩部/手臂 藍
胸部第二肋骨 綠
胸部第三肋骨 紅
腹部第一肋骨 藍
腹部第二肋骨 綠
骨盆 橘</td></tr>
<tr><td>3.1 Dummy Instrumentation
…
3.1.2
(請參考末頁表格)</td><td>3.1 Dummy Instrumentation
…
3.1.2
(請參考末頁表格)</td><td>3.4.3.1 人偶感測器及資料擷取系統設置
…
3.4.3.1.2 …</td><td>3.4.3.1 人偶感測器及資料擷取系統設置
…
3.4.3.1.2 …</td></tr>
</table>

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
		(請參考末頁表格)	(請參考末頁表格)
4.1 Overview of Settings (請參考末頁表格)	**4.1 Overview of Settings** (請參考末頁表格)	3.4.4.1 設定綜覽 (請參考末頁表格)	3.4.4.1 設定綜覽 (請參考末頁表格)
5.2 Head Protection Device marking … 5.2.3 Using the location of the H-point for the rear seating position as measured for the Rear Whiplash protocol, calculate and record the corresponding head centre of gravity positions in the most forward and rearward seating positions: 5th female Head CoG in most forward seating position: $X_{CoG,5th}$ = H-point(X) + 126 – remaining seat travel (if applicable) $Z_{CoG,5th}$ = H-point(Z) + 594 95th male Head CoG in most rearward seating position: $X_{CoG,95th}$ = H-point(X) + 147 + remaining seat travel (if applicable) $Z_{CoG,95th}$ = H-point(Z) + 693	**5.2 Head Protection Device marking** … 5.2.3 Using the location of the H-point for the rear seating position as measured for the Rear Whiplash protocol, calculate and record the corresponding head centre of gravity positions in the most forward and rearward seating positions: 5th female Head CoG in most forward seating position: $X_{CoG,5th}$ = H-point(X) + 126 – seat travel (if applicable) $Z_{CoG,5th}$ = H-point(Z) + 594 95th male Head CoG in most rearward seating position: $X_{CoG,95th}$ = H-point(X) + 147 $Z_{CoG,95th}$ = H-point(Z) + 693	3.4.5.2 頭部保護裝置(Head Protection Device，HPD)標記 … 3.4.5.2.3 使用後座鞭甩規章(Rear Whiplash)所測得之後座 H 點位置，計算並記錄後座最前方與最後方座椅位置其分別對應之頭部重心位置： 第 5 百分位女性於最前方座椅位置之頭部重心： $X_{CoG,5th}$ = H 點（X） + 126 – 座椅剩餘調整範圍（依實際狀況） $Z_{CoG,5th}$ = H 點（Z） + 594 第 95 百分位男性於最後方座椅位置之頭部重心： $X_{CoG,95th}$ = H 點（X）+ 147 + 座椅剩餘調整範圍（依實際狀況） $Z_{CoG,95th}$ = H 點（Z）+ 693	3.4.5.2 頭部保護裝置(Head Protection Device，HPD)標記 … 3.4.5.2.3 使用後座鞭甩規章(Rear Whiplash)所測得之後座 H 點位置，計算並記錄後座最前方與最後方座椅位置其分別對應之頭部重心位置： 第 5 百分位女性於最前方座椅位置之頭部重心： $X_{CoG,5th}$ = H 點（X） + 126 - 座椅調整範圍（依實際狀況） $Z_{CoG,5th}$ = H 點（Z） + 594 第 95 百分位男性於最後方座椅位置之頭部重心： $X_{CoG,95th}$ = H 點（X）+ 147 $Z_{CoG,95th}$ = H 點（Z）+ 693
5.3 Dummy Placement 5.3.1 It is the intention that the dummy should not be left to sit directly on the seat for more than 2 hours prior to the test. It is	**5.3 Dummy Placement** 5.3.1 It is the intention that the dummy should not be left to sit directly on the seat for more than 2 hours prior to the test. It is	3.4.5.3 人偶放置 3.4.5.3.1 試驗前，人偶不應直接坐在座椅上超過 2 小時。若試驗前 1 小時內檢查人偶定位，則允許人偶放	3.4.5.3 人偶放置 3.4.5.3.1 試驗前，人偶不應直接坐在座椅上超過 2 小時。可將人偶放置車內更久的時間，惟不應放置整晚

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
acceptable for the dummy to be left in the vehicle for a longer period, provided that the dummy position is checked no more then one hour prior to test. It is not acceptable for the dummy to be left in the vehicle overnight or for a similarly lengthy period.	acceptable for the dummy to be left in the vehicle for a longer period, provided that the dummy is not left in overnight or for a similarly lengthy period.	置車內較長時間。不應將試驗人偶整晚留置車內或類似長度的時間。	或類似長度的時間。
	5.3.2 If it is known that the dummy will be in the vehicle for a time longer than 2 hours, then the dummy should be sat on plywood boards placed over the seat. This should eliminate unrealistic compression of the seat		3.4.5.3.2 若已知人偶將放置車內超過 2 小時，則應於座椅上放置膠合板(Plywood board)，讓人偶坐在上面，如此可避免座椅不符實際狀況地壓縮(Compression)。
5.3.2 H-point	5.3.3 H-point	3.4.5.3.2 H 點	3.4.5.3.3 H 點
Note that the H-point of the WorldSID dummy is situated 20mm forward of that of the H-point determined by the H-point manikin.	**Note that the H-point of the WorldSID dummy is situated 20mm forward of that of the H-point determined by the H-point manikin.**	WorldSID 人偶的 H 點位於 H 點人體模型所決定之 H 點前方 20mm 處	WorldSID 人偶的 H 點位於 H 點人體模型所決定之 H 點前方 20mm 處
5.3.2.1 Using only the controls that move the seat fore-aft, move the test seat to the rearmost position to facilitate placement of the dummy.	5.3.3.1 Using only the controls that move the seat fore-aft, move the test seat to the rearmost position to facilitate placement of the dummy.	3.4.5.3.2.1 僅使用控制座椅前後移動的控制器，將試驗座椅移至最後方的位置，方便放置人偶。	3.4.5.3.3.1 僅使用控制座椅前後移動的控制器，將試驗座椅移至最後方的位置，方便放置人偶。
5.3.2.2 Position the dummy in the seat such that the mid-sagittal plane is coincident with the centreline markings and the upper torso resting against the seat back.	5.3.3.2 Position the dummy in the seat such that the mid-sagittal plane is coincident with the centreline markings and the upper torso resting against the seat back.	3.4.5.3.2.2 將人偶置於座椅上，使其正中矢狀切面(Mid-sagittal plane)對齊中線標記，並將上部軀幹靠在椅背上。	3.4.5.3.3.2 將人偶置於座椅上，使其正中矢狀切面(Mid-sagittal plane)對齊中線標記，並將上部軀幹靠在椅背上。
5.3.2.3 Apply a fore-aft and lateral rocking	5.3.3.3 Apply a fore-aft and lateral rocking	3.4.5.3.2.3 以前後及橫向搖晃動作，	3.4.5.3.3.3 以前後及橫向搖晃動作，

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
motion to settle the pelvis rearward in the seat.	motion to settle the pelvis rearward in the seat.	使骨盆向後貼合座椅。	使骨盆向後貼合座椅。
5.3.2.4 To ensure a repeatable and stable pelvis position, ensure that the pelvis is in contact with the seat cushion over the whole length.	5.3.3.4 To ensure a repeatable and stable pelvis position, ensure that the pelvis is in contact with the seat cushion over the whole length.	3.4.5.3.2.4 為確保可重複放置及固定之骨盆位置，確認整個骨盆與座墊確實接觸。	3.4.5.3.3.4 為確保可重複放置及固定之骨盆位置，確認整個骨盆與座墊確實接觸。
5.3.2.5 To ensure a repeatable placement of the lower abdominal rib, make sure it is inside the pelvis flesh and not on top of it.	5.3.3.5 To ensure a repeatable placement of the lower abdominal rib, make sure it is inside the pelvis flesh and not on top of it.	3.4.5.3.2.5 為確保下腹部肋骨可重複放置，確認肋骨位於骨盆腔(Pelvis flesh)內，而非骨盆腔上方。	3.4.5.3.3.5 為確保下腹部肋骨可重複放置，確認肋骨位於骨盆腔(Pelvis flesh)內，而非骨盆腔上方。
5.3.2.6 Move the seat together with the dummy to the test seat position defined in 4.4.9. If it is not possible to reach the seat test position due to knee contact, shift the targeted test seat position rearwards in the stepwise increments to the closest position where the knee clearance is at least 5mm. Modify the target H-point accordingly.	5.3.3.6 Move the seat together with the dummy to the test seat position defined in 4.4.9. If it is not possible to reach the seat test position due to knee contact, shift the targeted test seat position rearwards in the stepwise increments to the closest position where the knee clearance is at least 5mm. Modify the target H-point accordingly.	3.4.5.3.2.6 將座椅連同人偶移至 3.4.4.4.10 定義之試驗座椅位置。若因碰到膝部而無法移至該試驗座椅位置，則將目標試驗座椅位置逐步向後修改，直到膝部至少有 5mm 間隙為止，並依此修改目標 H 點。	3.4.5.3.3.6 將座椅連同人偶移至 3.4.4.4.10 定義之試驗座椅位置。若因碰到膝部而無法移至該試驗座椅位置，則將目標試驗座椅位置逐步向後修改，直到膝部至少有 5mm 間隙為止，並依此修改目標 H 點。
5.3.2.7 Verify that the H-point is reasonably close (±10mm) to the target H-point 5.1.21 or as defined in 5.3.2.6 if the target H-point has been modified. If not, repeat step 5.3.2.3. If it is still not possible, record the rearmost seat cushion reference point and the dummy H-point and proceed to the next step.	5.3.3.7 Verify that the H-point is reasonably close (±10mm) to the target H-point 5.1.21 or as defined in 5.3.3.6 if the target H-point has been modified. If not, repeat step 5.3.3.3. If it is still not possible, record the rearmost seat cushion reference point and the dummy H-point and proceed to the next step.	3.4.5.3.2.7 確認 H 點相當接近（±10mm）3.4.5.1.21 之目標 H 點，若目標 H 點已修改，則依 3.4.5.3.2.6 定義。否則，重複步驟 3.4.5.3.2.3。若仍無法符合，則記錄最後方座墊參考點及人偶 H 點，接著進行下個步驟。	3.4.5.3.3.7 確認 H 點相當接近（±10mm）3.4.5.1.21 之目標 H 點，若目標 H 點已修改，則依 3.4.5.3.3.6 定義。否則，重複步驟 3.4.5.3.3.3。若仍無法符合，則記錄最後方座墊參考點及人偶 H 點，接著進行下個步驟。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
5.3.2.8 Extend the right leg without displacing the thigh from the seat cushion. Allow the sole of the foot to settle on the accelerator pedal; the heel of the shoe should be in contact with the floor pan. Where a lack of ankle articulation prevents the foot from sitting flat on the accelerator pedal, keep the foot at a 90 degree angle to the tibia and ensure that the heel is in contact with the floor	5.3.3.8 Extend the right leg without displacing the thigh from the seat cushion. Allow the sole of the foot to settle on the accelerator pedal; the heel of the shoe should be in contact with the floor pan. Where a lack of ankle articulation prevents the foot from sitting flat on the accelerator pedal, keep the foot at a 90 degree angle to the tibia and ensure that the heel is in contact with the floor	3.4.5.3.2.8 在不移動座墊上大腿之情況下，伸展右腿並使鞋底平放於加速踏板上，鞋跟應接觸地板平底處(Floor pan)。若沒有踝關節，導致足部無法平放於加速踏板上，則使足部與脛骨呈 90 度，並確保鞋跟與地板接觸。	3.4.5.3.3.8 在不移動座墊上大腿之情況下，伸展右腿並使鞋底平放於加速踏板上，鞋跟應接觸地板平底處(Floor pan)。若沒有踝關節，導致足部無法平放於加速踏板上，則使足部與脛骨呈 90 度，並確保鞋跟與地板接觸。
5.3.2.9 Extend the left leg without lifting the thigh from the seat cushion and allow the sole of the foot to settle on the footrest or floor if no footrest is present. The heel of the shoe should be in contact with the floor. In case of tibia contact, slide the foot rearward toward the seat until a 5mm clearance is obtained. Where a lack of ankle articulation prevents the foot from sitting flat on the floor, keep the foot at a 90 degree angle to the tibia and ensure that the heel is in contact with the floor.	5.3.3.9 Extend the left leg without lifting the thigh from the seat cushion and allow the sole of the foot to settle on the footrest or floor if no footrest is present. The heel of the shoe should be in contact with the floor. In case of tibia contact, slide the foot rearward toward the seat until a 5mm clearance is obtained. Where a lack of ankle articulation prevents the foot from sitting flat on the floor, keep the foot at a 90 degree angle to the tibia and ensure that the heel is in contact with the floor.	3.4.5.3.2.9 在不移動座墊上大腿之情況下，伸展左腿並使鞋底平放於置腳板(Footrest)或地板（若未配備置腳板）上，鞋跟應接觸地板。若碰到脛骨，則將足部向後朝座椅移動，直到有 5mm 的間隙。若沒有踝關節，導致足部無法平放於地板上，則使足部與脛骨呈 90 度，並確保鞋跟與地板接觸。	3.4.5.3.3.9 在不移動座墊上大腿之情況下，伸展左腿並使鞋底平放於置腳板(Footrest)或地板（若未配備置腳板）上，鞋跟應接觸地板。若碰到脛骨，則將足部向後朝座椅移動，直到有 5mm 的間隙。若沒有踝關節，導致足部無法平放於地板上，則使足部與脛骨呈 90 度，並確保鞋跟與地板接觸。
5.3.2.10 Position the H-point of the dummy to match the WorldSID H-point coordinates recorded following Section 5.1 to within	5.3.3.10 Position the H-point of the dummy to match the WorldSID H-point coordinates recorded following Section 5.1 to within	3.4.5.3.2.10 調整人偶 H 點，以符合依 3.4.5.1 紀錄之 WorldSID H 點座標（容許誤差±10mm），以 X 座標為優	3.4.5.3.3.10 調整人偶 H 點，以符合依 3.4.5.1 紀錄之 WorldSID H 點座標（容許誤差±10mm），以 X 座標為優

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
±10mm. Prioritise the X coordinate.	±10mm. Prioritise the X coordinate.	先。	先。
5.3.3 Head and torso	5.3.4 Head and torso	3.4.5.3.3 頭部及軀幹	3.4.5.3.4 頭部及軀幹
5.3.3.1 Adjust the dummy until the thorax tilt sensor coincides with the angle specified by the manufacturer.	5.3.4.1 Adjust the dummy until the thorax tilt sensor coincides with the angle specified by the manufacturer.	3.4.5.3.3.1 調整人偶，使胸部傾斜感測器符合車輛業者宣告之角度。	3.4.5.3.4.1 調整人偶，使胸部傾斜感測器符合車輛業者宣告之角度。
5.3.3.2 If the rib angle is not specified by the manufacturer and the torso angle is 23° ± 1°, adjust the dummy until the thorax tilt sensor reads −2° (2° downwards) ± 1°.	5.3.4.2 If the rib angle is not specified by the manufacturer and the torso angle is 23° ± 1°, adjust the dummy until the thorax tilt sensor reads −2° (2° downwards) ± 1°.	3.4.5.3.3.2 若車輛業者未宣告肋骨角度且軀幹角度為 23±1 度，則調整人偶，使其胸部感測器讀數為−2 度（朝下 2 度）±1 度。	3.4.5.3.4.2 若車輛業者未宣告肋骨角度且軀幹角度為 23±1 度，則調整人偶，使其胸部感測器讀數為−2 度（朝下 2 度）±1 度。
5.3.3.3 If no rib angle is specified and the seat back angle is not 23° ± 1°, no further adjustment of rib angle is required.	5.3.4.3 If no rib angle is specified and the seat back angle is not 23° ± 1°, no further adjustment of rib angle is required.	3.4.5.3.3.3 若未宣告肋骨角度且椅背角度非為 23±1 度，則無須再調整肋骨角度。	3.4.5.3.4.3 若未宣告肋骨角度且椅背角度非為 23±1 度，則無須再調整肋骨角度。
5.3.3.4 Adjust the dummy neck bracket to level the head at the closest position to 0° ± 1°.	5.3.4.4 Adjust the dummy neck bracket to level the head at the closest position to 0° ± 1°.	3.4.5.3.3.4 調整人偶頸套 (Neck bracket)，使頭部水平盡可能接近 0±1 度。	3.4.5.3.4.4 調整人偶頸套 (Neck bracket)，使頭部水平盡可能接近 0±1 度。
5.3.4 Legs and feet	5.3.5 Legs and feet	3.4.5.3.4 腿部及足部	3.4.5.3.5 腿部及足部
5.3.4.1 Proceed to the final foot and leg positioning by repeating Section 5.1.7 and 5.1.8. Where a lack of ankle articulation prevents the foot from sitting flat on the accelerator pedal/floor, keep the foot at a 90 degree angle to the tibia and ensure that the heel is as far forward as possible and in contact with the floor.	5.3.5.1 Proceed to the final foot and leg positioning by repeating Section 5.1.7 and 5.1.8. Where a lack of ankle articulation prevents the foot from sitting flat on the accelerator pedal/floor, keep the foot at a 90 degree angle to the tibia and ensure that the heel is as far forward as possible and in contact with the floor.	3.4.5.3.4.1 重複 3.4.5.1.7 及 3.4.5.1.8，進行最後的足部及腿部位置調整。若沒有踝關節，導致足部無法平放於加速踏板/地板上，則使足部與脛骨呈 90 度，並確保鞋跟盡可能向前移且與地板接觸。	3.4.5.3.5.1 重複 3.4.5.1.7 及 3.4.5.1.8，進行最後的足部及腿部位置調整。若沒有踝關節，導致足部無法平放於加速踏板/地板上，則使足部與脛骨呈 90 度，並確保鞋跟盡可能向前移且與地板接觸。
5.3.4.2 No distance is specified for the knee	5.3.5.2 No distance is specified for the knee	3.4.5.3.4.2 膝部間隔距離並未規定，惟	3.4.5.3.5.2 膝部間隔距離並未規定，惟

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
spacing. However, priority should be given to ensure the following:	spacing. However, priority should be given to ensure the following:	應優先考量下列條件：	應優先考量下列條件：
5.3.4.3 There is 5 mm clearance between the knees/legs and the steering shroud and centre console.	5.3.5.3 There is 5 mm clearance between the knees/legs and the steering shroud and centre console.	3.4.5.3.4.3 膝部/腿部距轉向機柱護蓋(Steering shroud)與中控台(Centre console)有 5mm 的間隙。	3.4.5.3.5.3 膝部/腿部距轉向機柱護蓋(Steering shroud)與中控台(Centre console)有 5mm 的間隙。
5.3.4.4 There is a stable foot and ankle position.	5.3.5.4 There is a stable foot and ankle position.	3.4.5.3.4.4 足部及腳踝位置穩定。	3.4.5.3.5.4 足部及腳踝位置穩定。
5.3.4.5 The legs are as parallel as possible to the sagittal plane.	5.3.5.5 The legs are as parallel as possible to the sagittal plane.	3.4.5.3.4.5 雙腿盡可能與矢狀切面平行。	3.4.5.3.5.5 雙腿盡可能與矢狀切面平行。
5.3.5 Arms	5.3.6 Arms	3.4.5.3.5 手臂	3.4.5.3.6 手臂
5.3.5.1 Place both arms at the first detent downward of the most upward detent that corresponds to a differential angle of 32° between rib angle sensor and the arm angle.	5.3.6.1 Place both arms at the first detent downward of the most upward detent that corresponds to a differential angle of 32° between rib angle sensor and the arm angle.	3.4.5.3.5.1 肋骨角度感測器與手臂角度之水平夾角(Differential angle)須達 32 度，將雙臂置於由上往下第一個符合此要求之鎖定位置(Detent)。	3.4.5.3.6.1 肋骨角度感測器與手臂角度之水平夾角(Differential angle)須達 32 度，將雙臂置於由上往下第一個符合此要求之鎖定位置(Detent)。
5.3.6 Seat belt	5.3.7 Seat belt	3.4.5.3.6 安全帶	3.4.5.3.7 安全帶
5.3.6.1 Where possible, initially position the upper seat belt anchorage in the manufacturers 50th percentile design position. If no design position is provided, set the adjustable upper seat belt anchorage to the mid-position or nearest notch upward.	5.3.7.1 Where possible, initially position the upper seat belt anchorage in the manufacturers 50th percentile design position. If no design position is provided, set the adjustable upper seat belt anchorage to the mid-position or nearest notch upward.	3.4.5.3.6.1 依實際狀況，先將安全帶上部固定器調整至車輛業者第 50 百分位設計位置。若未提供設計位置，則將可調整的安全帶上部固定器設於中間位置或向上最接近的段位。	3.4.5.3.7.1 依實際狀況，先將安全帶上部固定器調整至車輛業者第 50 百分位設計位置。若未提供設計位置，則將可調整的安全帶上部固定器設於中間位置或向上最接近的段位。
5.3.6.2 Carefully place the seat belt across the dummy and lock as normal.	5.3.7.2 Carefully place the seat belt across the dummy and lock as normal.	3.4.5.3.6.2 將安全帶小心圍繞試驗人偶，並正常扣上。	3.4.5.3.7.2 將安全帶小心圍繞試驗人偶，並正常扣上。
5.3.6.3 Remove the slack from the lap section of the webbing until it is resting gently	5.3.7.3 Remove the slack from the lap section of the webbing until it is resting gently	3.4.5.3.6.3 消除腰部織帶鬆弛，直到織帶輕輕繞過貼合人偶骨盆周圍。	3.4.5.3.7.3 消除腰部織帶鬆弛，直到織帶輕輕繞過貼合人偶骨盆周圍。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
around the pelvis of the dummy. Only minimal force should be applied to the webbing when removing the slack. The route of the lap belt should be as natural as possible.	around the pelvis of the dummy. Only minimal force should be applied to the webbing when removing the slack. The route of the lap belt should be as natural as possible.	消除織帶鬆弛部分時，應盡可能使用最小的力道。腰部安全帶(Lap belt)路徑應盡可能平順自然。	消除織帶鬆弛部分時，應盡可能使用最小的力道。腰部安全帶(Lap belt)路徑應盡可能平順自然。
5.3.6.4 Place one finger behind the diagonal section of the webbing at the height of the dummy sternum. Pull the webbing away from the chest horizontally forward and allow it to retract in the direction of the D-loop using only the force provided by the retractor mechanism. Repeat this step three times, only.	5.3.7.4 Place one finger behind the diagonal section of the webbing at the height of the dummy sternum. Pull the webbing away from the chest horizontally forward and allow it to retract in the direction of the D-loop using only the force provided by the retractor mechanism. Repeat this step three times, only.	3.4.5.3.6.4 將一隻手指置於織帶對角線部位後方且人偶胸骨高度處。將織帶水平往前拉，遠離胸部，並讓織帶僅依捲收器機構的力道向導帶環(D-loop)方向捲收。重複此步驟三次。	3.4.5.3.7.4 將一隻手指置於織帶對角線部位後方且人偶胸骨高度處。將織帶水平往前拉，遠離胸部，並讓織帶僅依捲收器機構的力道向導帶環(D-loop)方向捲收。重複此步驟三次。
5.3.6.5 After following the above steps, the seatbelt should lie in a natural position across the dummy sternum and shoulder clavicle. Where this is not the case, for example the belt is close to or in contact with the neck or the belt is above the shoulder rotation adjustment screw, and the upper belt anchorage is adjustable the anchorage should be lowered and steps 5.3.6.3 and 5.3.6.4 repeated.	5.3.7.5 After following the above steps, the seatbelt should lie in a natural position across the dummy sternum and shoulder clavicle. Where this is not the case, for example the belt is close to or in contact with the neck or the belt is above the shoulder rotation adjustment screw, and the upper belt anchorage is adjustable the anchorage should be lowered and steps 5.3.7.3 and 5.3.7.4 repeated.	3.4.5.3.6.5 依上述步驟執行後，安全帶應圍繞人偶胸骨及肩部鎖骨，處於自然位置。若情況並非如此，例如安全帶接近或接觸頸部，或位於肩部旋轉調整螺絲上，而安全帶上部固定器可以調整，則應降低該固定器，並重複步驟 3.4.5.3.6.3 及 3.4.5.3.6.4。	3.4.5.3.7.5 依上述步驟執行後，安全帶應圍繞人偶胸骨及肩部鎖骨，處於自然位置。若情況並非如此，例如安全帶接近或接觸頸部，或位於肩部旋轉調整螺絲上，而安全帶上部固定器可以調整，則應降低該固定器，並重複步驟 3.4.5.3.7.3 及 3.4.5.3.7.4。
5.3.6.6 The upper anchorage should be lowered by a sufficient amount to ensure a	5.3.7.6 The upper anchorage should be lowered by a sufficient amount to ensure a	3.4.5.3.6.6 重複步驟 3.4.5.3.6.3 及 3.4.5.3.6.4 後，上部固定器應降至合	3.4.5.3.7.6 重複步驟 3.4.5.3.7.3 及 3.4.5.3.7.4 後，上部固定器應降至合

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
natural belt position following the repetition of steps 5.3.6.3 and 5.3.6.4. This may require multiple attempts.	natural belt position following the repetition of steps 5.3.7.3 and 5.3.7.4. This may require multiple attempts.	適高度，足以確保安全帶處於自然位置。這可能須要多次嘗試。	適高度，足以確保安全帶處於自然位置。這可能須要多次嘗試。
5.3.6.7 Once the belt is positioned the location of the belt should be marked across the dummy chest to ensure that no further adjustments are made. Mark also the belt at the level of the D-loop to be sure that the initial tension is maintained during test preparation.	5.3.7.7 Once the belt is positioned the location of the belt should be marked across the dummy chest to ensure that no further adjustments are made. Mark also the belt at the level of the D-loop to be sure that the initial tension is maintained during test preparation.	3.4.5.3.6.7 安全帶位置調整好後，應於試驗人偶胸部標記安全帶位置，以確保不再有調整。同時，在安全帶上於導帶環高度處標記，以利於試驗準備期間維持初始張力。	3.4.5.3.7.7 安全帶位置調整好後，應於試驗人偶胸部標記安全帶位置，以確保不再有調整。同時，在安全帶上於導帶環高度處標記，以利於試驗準備期間維持初始張力。
5.3.6.8 Measure the vertical distance between the dummy nose and the diagonal webbing.	5.3.7.8 Measure the vertical distance between the dummy nose and the diagonal webbing.	3.4.5.3.6.8 測量人偶鼻子與對角式織帶的垂直距離	3.4.5.3.7.8 測量人偶鼻子與對角式織帶的垂直距離。
5.3.6.9 Measure the horizontal distance between the diagonal webbing and the door/window.	5.3.7.9 Measure the horizontal distance between the diagonal webbing and the door/window.	3.4.5.3.6.9 測量對角式織帶與車門/車窗的水平距離。	3.4.5.3.7.9 測量對角式織帶與車門/車窗的水平距離。
5.3.7 After positioning the dummy measure and record the dummy position according to Section 6.4 and determine the impact location as described in Section 1.4.	5.3.8 After positioning the dummy measure and record the dummy position according to Section 6.4 and determine the impact location as described in Section 1.4	3.4.5.3.7 人偶位置調整好後，依照 3.4.5.4 進行量測並記錄人偶位置，再依 3.4.1.4 所述決定撞擊位置。	3.4.5.3.8 人偶位置調整好後，依照 3.4.5.4 進行量測並記錄人偶位置，再依 3.4.1.4 所述決定撞擊位置。

2019年Euro NCAP規章

3.1.2

Location	Parameter	Minimum amplitude	Channel count
Head	Linear acceleration, Ax, Ay, Az	250g	3
Upper neck	Forces and moments Fx, Fy, Fz, Mx, My, Mz	5kN, 300Nm	6
Shoulder – Joint	Forces, Fx, Fy, Fz	8kN	3
Shoulder – Rib	Displacement & rotation	100mm	2
Thorax - Upper rib	Displacement & rotation	100mm	2
Thorax - Mid rib	Displacement & rotation	100mm	2
Thorax - Lower rib	Displacement & rotation	100mm	2
Thoracic temperature*	Temperature, see 2.5.1.3	30°C	1
Abdomen - Upper rib	Displacement & rotation	100mm	2
Abdomen - Lower rib	Displacement & rotation	100mm	2
Spine - T12	Acceleration, Ax, Ay, Az	200g	3
Pelvis	Acceleration, Ax, Ay, Az	200g	3
Pelvis – Pubic	Force	5kN	1
Femoral neck – struck side only	Force, Fx, Fy, Fz	5kN	3
	Total Channels		**35**

2017年Euro NCAP規章

3.1.2

Location	Parameter	Minimum amplitude	Channel count
Head	Linear acceleration, Ax, Ay, Az	250g	3
Upper neck	Forces and moments Fx, Fy, Fz, Mx, My, Mz	5kN, 300Nm	6
Shoulder – Joint	Forces, Fx, Fy, Fz	8kN	3
Shoulder – Rib 2d IR Tracc	Displacement & rotation	100mm	2
Thorax - Upper rib 2d IR Tracc	Displacement & rotation	100mm	2
Thorax - Mid rib 2d IR Tracc	Displacement & rotation	100mm	2
Thorax - Lower rib 2d IR Tracc	Displacement & rotation	100mm	2
Thoracic temperature*	Temperature, see 2.5.1.3	30°C	1
Abdomen - Upper rib 2d IR Tracc	Displacement & rotation	100mm	2
Abdomen - Lower rib 2d IR Tracc	Displacement & rotation	100mm	2
Spine - T12	Acceleration, Ax, Ay, Az	200g	3
Pelvis	Acceleration, Ax, Ay, Az	200g	3
Pelvis – Pubic	Force	5kN	1
Femoral neck – struck side only	Force, Fx, Fy, Fz	5kN	3
	Total Channels		**35**

修訂 TNCAP 條文草案

3.4.3.1.2

位置	參數	最低振幅	頻道數量
頭部	線性加速度(Linear acceleration)，A_x、A_y、A_z	250g	3
上頸部	力與力矩 F_x、F_y、F_z，M_x、M_y、M_z	5kN, 300Nm	6

對應 TNCAP 條文

3.4.3.1.2

位置	參數	最低振幅	頻道數量
頭部	線性加速度(Linear acceleration)，A_x、A_y、A_z	250g	3
上頸部	力與力矩 F_x、F_y、F_z，M_x、M_y、M_z	5kN, 300Nm	6

肩部－關節	力，F_x、F_y、F_z	8kN	3
肩部－肋骨	位移及旋轉	100mm	2
胸部－上肋骨	位移及旋轉	100mm	2
胸部－中肋骨	位移及旋轉	100mm	2
胸部－下肋骨	位移及旋轉	100mm	2
胸部溫度*	溫度，如 2.5.1.3	30℃	1
腹部－上肋骨	位移及旋轉	100mm	2
腹部－下肋骨	位移及旋轉	100mm	2
脊椎- T12	加速度，A_x、A_y、A_z	200g	3
骨盆	加速度，A_x、A_y、A_z	200g	3
骨盆– 恥骨	力	5kN	1
股骨頸－僅撞擊側	力，F_x、F_y、F_z	5kN	3
	頻道總數		35

肩部－關節	力，F_x、F_y、F_z	8kN	3
肩部－肋骨 2dIR Tracc	位移及旋轉	100mm	2
胸部－上肋骨 2d IR Tracc	位移及旋轉	100mm	2
胸部－中肋骨 2d IR Tracc	位移及旋轉	100mm	2
胸部－下肋骨 2d IR Tracc	位移及旋轉	100mm	2
胸部溫度*	溫度，如 2.5.1.3	30℃	1
腹部－上肋骨 2d IR Tracc	位移及旋轉	100mm	2
腹部－下肋骨 2d IR Tracc	位移及旋轉	100mm	2
脊椎- T12	加速度，A_x、A_y、A_z	200g	3
骨盆	加速度，A_x、A_y、A_z	200g	3
骨盆– 恥骨	力	5kN	1
股骨頸－僅撞擊側	力，F_x、F_y、F_z	5kN	3
	頻道總數		35

2019年Euro NCAP規章	2017年Euro NCAP規章
4.1	4.1

Adjustment	Required Setting	Notes	Methods
Seat Fore/Aft	As defined in 4.4		
Seat Base Tilt	As defined in 4.4		
Seat Height	As defined in 4.4		
Torso Angle	Manufacturer's design position	Otherwise 23° to Vertical	See Section 5.1
Seat Lumbar Support	Fully retracted		See Section 0
Front Head Restraint Height & Tilt	Mid locking position	As whiplash test position. If there is any interference with the rear of the dummy head, move the HR to the most rearward position.	See Section 6.2 Whiplash testing protocol.
Steering wheel	Highest position and most outward		See Section 4.5
Rear Seat Fore/Aft	Fully rearward		See Section 4.6
Rear Seat Back Angle	Manufacturer's design position	Otherwise 25° to Vertical	See Section 4.6
Rear Seat Facing	Forward		
Rear Head Restraint Height & Tilt	As recommended in vehicle handbook.	Where no details are provided in the handbook, set to mid or next lowest position for height and mid locking position for tilt.	See Section 6.2 Whiplash testing protocol.
Arm-rests (Front seats)	Lowered position	May be left up if dummy positioning does not allow lowering. Where adjustable place in horizontal position.	
Arm-rests (Rear seats)	Stowed position		
Side Window Glazing	All raised		
Gear change lever	In the neutral position		
Parking Brake	Engaged		
Pedals	Normal position of rest	Adjustable pedals fully forward	See Section 0
Doors	Closed, not locked		
Roof / sunroof	Raised / fully closed	Where applicable	
Sun Visors	Stowed position		
Rear view mirror	Normal position of use		
Seat belt anchorage (where adjustable)	Initially, manufacturer's 50th percentile design position	If no design position then set to mid position, or nearest notch upwards	See Section 5.3.6

(查項次異動並不影響座椅及踏板調整對應章節(4.2節)，故研判此處Section 0為誤植)

Adjustment	Required Setting	Notes	Methods
Seat Fore/Aft	As defined in 4.4		
Seat Base Tilt	As defined in 4.4		
Seat Height	As defined in 4.4		
Torso Angle	Manufacturer's design position	Otherwise 23° to Vertical	See Section 5.1
Seat Lumbar Support	Fully retracted		See Section 4.2
Front Head Restraint Height & Tilt	Mid locking position	As whiplash test position. If there is any interference with the rear of the dummy head, move the HR to the most rearward position.	See Section 6.2 Whiplash testing protocol.
Steering wheel	Highest position and most outward		See Section 4.5
Rear Seat Fore/Aft	Fully rearward		See Section 4.6
Rear Seat Back Angle	Manufacturer's design position	Otherwise 25° to Vertical	See Section 4.6
Rear Seat Facing	Forward		
Rear Head Restraint Height & Tilt	As recommended in vehicle handbook.	Where no details are provided in the handbook, set to mid or next lowest position for height and mid locking position for tilt.	See Section 6.2 Whiplash testing protocol.
Arm-rests (Front seats)	Lowered position	May be left up if dummy positioning does not allow lowering. Where adjustable place in horizontal position.	
Arm-rests (Rear seats)	Stowed position		
Side Window Glazing	All raised		
Gear change lever	In the neutral position		
Parking Brake	Engaged		
Pedals	Normal position of rest	Adjustable pedals fully forward	See Section 4.2
Doors	Closed, not locked		
Roof / sunroof	Raised / fully closed	Where applicable	
Sun Visors	Stowed position		
Rear view mirror	Normal position of use		
Seat belt anchorage (where adjustable)	Initially, manufacturer's 50th percentile design position	If no design position then set to mid position, or nearest notch upwards	See Section 5.3.7

修訂 TNCAP 條文草案	對應 TNCAP 條文

3.4.4.1

調整	設定要求	附註	做法
座椅前後位置	如 3.4.4.4 定義		
座椅底座(seat base)傾斜度	如 3.4.4.4 定義		
座椅高度	如 3.4.4.4 定義		
軀幹角度	車輛業者之設計位置	否則為垂直向後傾斜 23 度	如 3.4.5.1
座椅腰部支撐	完全縮回		如 3.4.4.2
第一排座椅頭枕高度及傾斜度	中間鎖定位置	同鞭甩(Whiplash)試驗位置。頭枕若會影響人偶頭部後方，則將頭枕移至最後方的位置。	如「前座鞭甩試驗規章」3.5.5.2
方向盤	最高且最向後（靠人偶）位置		如 3.4.4.5
後座前後位置	完全向後		如 3.4.4.6
後座椅背角度	車輛業者之設計位置	否則為垂直向後傾斜 25 度	如 3.4.4.6
後座方向	朝前		

3.4.4.1

調整	設定要求	附註	做法
座椅前後位置	如 3.4.4.4 定義		
座椅底座(seat base)傾斜度	如 3.4.4.4 定義		
座椅高度	如 3.4.4.4 定義		
軀幹角度	車輛業者之設計位置	否則為垂直向後傾斜 23 度	如 3.4.5.1
座椅腰部支撐	完全縮回		如 3.4.4.2
第一排座椅頭枕高度及傾斜度	中間鎖定位置	同鞭甩(Whiplash)試驗位置。頭枕若會影響人偶頭部後方，則將頭枕移至最後方的位置。	如「前座鞭甩試驗規章」3.5.5.2
方向盤	最高且最向後（靠人偶）位置		如 3.4.4.5
後座前後位置	完全向後		如 3.4.4.6
後座椅背角度	車輛業者之設計位置	否則為垂直向後傾斜 25 度	如 3.4.4.6
後座方向	朝前		

後座頭枕高度及傾斜度	如車主手冊建議	手冊若未提供相關資訊，則將高度調整至中間或向下最接近的位置，並將傾斜度調整至中間鎖定位置。	如「前座鞭甩試驗規章」3.5.5.2	
扶手（第一排座椅）	使用位置	若人偶放置後扶手無法位於使用位置，則可保持於非使用位置。於水平位置可調整處。		
扶手（後座）	收納位置			
車窗	全部升起			
變速箱	空檔			
駐煞車	致動(Engaged)			
踏板	未踩踏之正常位置(Position of rest)	可調整式踏板設於完全向前的位置	如 3.4.4.2	
車門	關閉但不上鎖			
車頂/天窗	升起/完全關閉	依實際狀況		
遮陽板	收合位置			
照後鏡	正常使用位置			
安全帶固定裝置（若可調整）	初始為車輛業者第 50 百分位之設計位置	若無設計位置，則調整至中間位置或至向上最接近的段位	如 3.4.5.3.6	

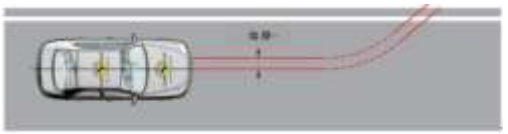
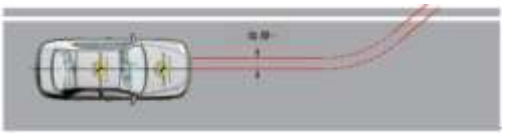
後座頭枕高度及傾斜度	如車主手冊建議	手冊若未提供相關資訊，則將高度調整至中間或向下最接近的位置，並將傾斜度調整至中間鎖定位置。	如「前座鞭甩試驗規章」3.5.5.2
扶手（第一排座椅）	使用位置	若人偶放置後扶手無法位於使用位置，則可保持於非使用位置。於水平位置可調整處。	
扶手（後座）	收納位置		
車窗	全部升起		
變速箱	空檔		
駐煞車	致動(Engaged)		
踏板	未踩踏之正常位置(Position of rest)	可調整式踏板設於完全向前的位置	如 3.4.4.2
車門	關閉但不上鎖		
車頂/天窗	升起/完全關閉	依實際狀況	
遮陽板	收合位置		
照後鏡	正常使用位置		
安全帶固定裝置（若可調整）	初始為車輛業者第 50 百分位之設計位置	若無設計位置，則調整至中間位置或至向上最接近的段位	如 3.4.5.3.7

TEST PROTOCOL – Lane Support Systems 3.12車道輔助系統之試驗規章

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
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.	**2 DEFINITIONS** …	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。	3.12.1名詞釋義 …
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.	**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.	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。	3.12.1.2 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。
Lane Departure Warning (LDW) – a warning that is provided automatically by the vehicle in response to the vehicle that is about to drift beyond a delineated edge line of the current travel lane. …	**Lane Departure Warning (LDW)** – a warning that is provided automatically by the vehicle in response to the vehicle that is about to drift beyond a delineated edge line of the current travel lane.	3.12.1.4 車道偏離輔助警示系統(Lane Departure Warning, LDW):車輛偵測到即將偏離目前行駛之車道邊界標線時,所自動出現之警示。 …	3.12.1.3 車道偏離輔助警示系統(Lane Departure Warning, LDW):車輛偵測到即將偏離目前行駛之車道邊界標線時,所自動出現之警示。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
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. …	3.12.1.6 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、活動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。	3.12.1.4 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、活動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		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。	
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.		3.12.1.8 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，受驗車輛會碰撞全球目標車之預估時間值。	
Lane Edge – means the inner side of the lane marking or the road edge		3.12.1.9 車道邊緣(Lane Edge):係指車道標線內側或道路邊緣。	
	Time To Line Crossing (TTLC) – means the remaining time before the		3.12.1.6 越線剩餘時間（Time To Line Crossing, TTLC）:假設受驗車輛持續

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
	VUT crosses the line, assuming that the VUT would continue to travel with the same lateral velocity towards the lane marking.		以相同側向速度偏離向車道標線，受驗車輛距越線所剩餘時間。
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.	**Distance To Line Crossing (DTLC) –** means the remaining lateral distance (perpendicular to the line) between the inner side of the lane marking and most outer edge of the tire, before the VUT crosses the line, assuming that the VUT would continue to travel with the same lateral velocity towards the lane marking.	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）。	3.12.1.7 越線剩餘距離（Distance To Line Crossing, DTLC）：假設受驗車輛持續以相同側向速度偏離向車道標線，車道標線內緣與輪胎外緣間距越線前所剩餘距離（與車道標線垂直）。
3 REFERENCE SYSTEM … **3.2 Lateral Path Error** 3.2.1 The lateral path error is determined as the lateral distance between the 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	**3 REFERENCE SYSTEM** … **3.2 Lateral Deviation from Path** 3.2.1 The lateral deviation from path is determined as the lateral distance between the 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	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，如下圖所示。本量測適用於直線行進後偏移之車道偏離。	3.12.2 參考系統 … 3.12.2.2 側向偏離路徑 3.12.2.2.1 側向偏離路徑之定義為受驗車輛前方中心與預定路徑平行之側向距離，如下圖所示。本量測適用於直線行進後偏移之車道偏離。

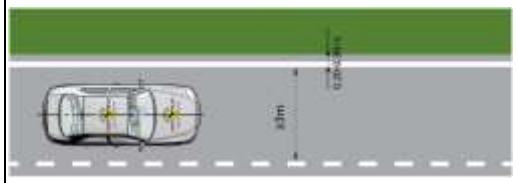
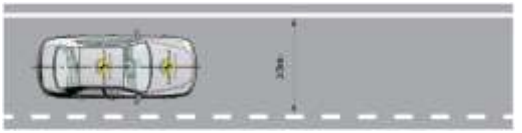
2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
departure. Lateral Deviation from Path = Y_{VUT} error  Figure 2: Lateral Path Error	departure. Lateral Deviation from Path = Y_{VUT} error  Figure 2: Lateral Deviation from Path	側向偏離路徑 =Y 受驗車輛誤差  圖 2：側向偏移量	側向偏離路徑 =Y 受驗車輛誤差  圖 2：側向偏離路徑
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 … •$T_{steer,}$ 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** 4.1.1 Sample and record all dynamic data at a frequency of at least 100Hz. **4.2 Measurements and Variables** 4.2.1 Time T … •$T_{crossing}$, time where VUT crosses the line $T_{crossing}$ …	3.12.3 量測配備 3.12.3.1 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。 3.12.3.2 量測與變數 3.12.3.2.1時間 T … (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 $T_{crossing}$ …	3.12.3 量測配備 3.12.3.1 所有動態數據之採樣及記錄頻率不得低於 100Hz。 3.12.3.2 量測與變數 3.12.3.2.1 時間 T … (4) $T_{crossing}$，受驗車輛越線時間 $T_{crossing}$ …

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
4.2.3 Position of the GVT during the entire test X_{GVT}, Y_{GVT}		3.12.3.2.3 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 $V_{long,VUT}$ $V_{lat,VUT}$	4.2.3 Speed of the VUT during the entire test $Vlong_{VUT}$ •$V_{crossing}$, speed when VUT crosses the line $Vlat_{VUT}$ $V_{crossing}$	3.12.3.2.4 試驗過程中受驗車輛之速度 $V_{long,VUT}$ $V_{lat,VUT}$ V_{GVT}	3.12.3.2.3 試驗過程中受驗車輛之速度 $Vlong_{VUT}$ (1) $V_{crossing}$，受驗車輛越線時之速度 $Vlat_{VUT}$ $V_{crossing}$
4.2.5 Speed of the GVT during the entire test V_{GVT}		3.12.3.2.5 試驗過程中全球目標車輛之速度	
4.2.6 Yaw velocity of the VUT during the entire test Ψ_{VUT}	4.2.4 Yaw velocity of the VUT during the entire test Ψ_{VUT}	3.12.3.2.6 試驗過程中受驗車輛之橫擺角速度 Ψ_{VUT}	3.12.3.2.4 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 Ψ_{GVT}		3.12.3.2.7 試驗過程中全球目標車之橫擺角速度 Ψ_{GVT}	
4.2.8 Steering wheel velocity of the VUT during the entire test Ω_{VUT}	4.2.5 Steering wheel velocity of the VUT during the entire test Ω_{VUT}	3.12.3.2.8 試驗過程中受驗車輛之方向盤轉速 Ω_{VUT}	3.12.3.2.5 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**	3.12.3.3 量測配備精度	3.12.3.3 量測配備精度
4.3.1 Equip the VUT with data measurement and acquisition equipment to sample and record data with an accuracy of at least: • VUT and GVT longitudinal speed to 0.1km/h; • VUT and GVT lateral and	4.3.1 Equip the VUT with data measurement and acquisition equipment to sample and record data with an accuracy of at least: • VUT longitudinal speed to 0.1km/h; • VUT lateral and longitudinal position to 0.03m;	3.12.3.3.1 受驗車輛應配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縱向速度：0.1km/h； (2) 受驗車輛與全球目標車之橫向及縱向位置：0.03m；	3.12.3.3.1 受驗車輛應配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) 受驗車輛縱向速度：0.1km/h； (2) 受驗車輛之橫向及縱向位置：0.03m；

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
longitudinal position to 0.03m; • VUT heading angle to 0.1°; • VUT and GVT yaw rate to 0.1°/s; … **4.4 Data Filtering** 4.4.1 Filter the measured data as follows: … 4.4.1.2 Acceleration, yaw rate, steering wheel torque and steering wheel velocity with a 12-pole phaseless Butterworth filter with a cut off frequency of 10Hz.	• VUT heading angle to 0.1°; • VUT yaw rate to 0.1°/s; … **4.4 Data Filtering** 4.4.1 Filter the measured data as follows: … 4.4.1.2 Acceleration, yaw rate and steering wheel torque with a 12-pole phaseless Butterworth filter with a cut off frequency of 10Hz.	(3) 受驗車輛方向角（heading angle）：0.1°； (4) 受驗車輛與全球目標車橫擺角速度：0.1°/s； … 3.12.3.4 數據濾波 3.12.3.4.1 依據下列原則對量測所得數據進行濾波： … 3.12.3.4.1.2 加速度、橫擺角速度、方向盤扭力以及方向盤轉速由 12-pole phaseless 巴特沃斯濾波器(Butterworth filter)及 10Hz 之截止頻率進行濾波。	(3) 受驗車輛方向角（heading angle）：0.1°； (4) 受驗車輛橫擺角速度：0.1°/s； … 3.12.3.4 數據濾波 3.12.3.4.1 依據下列原則對量測所得數據進行濾波： … 3.12.3.4.1.2 加速度、橫擺角速度及方向盤扭力由 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 **5.1 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 vehicle.		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）。	

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
 Figure 3: Global Vehicle Target (GVT) 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.		 圖 3：全球目標車(GVT) 3.12.4.1.2 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 **6.1 Test Track** 6.1.1 Conduct tests on a dry (no visible moisture on the surface), uniform, solid-paved surface with a maximum	**5 TEST CONDITIONS** **5.1 Test Track** 5.1.1 Conduct tests on a dry (no visible moisture on the surface), uniform,	3.12.5 試驗條件 3.12.5.1 試驗道路 3.12.5.1.1 試驗道路應乾燥（試驗路面無明顯可見之水分）、平整、固態鋪	3.12.4 試驗條件 3.12.4.1 試驗道路 3.12.4.1.1 試驗道路應乾燥（試驗路面無明顯可見之水分）、平整、固態鋪

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
slope of 1% in the longitudinal direction, < 2% for half a lane width either side of the centreline and < 3% for the outer half of the test lane in lateral direction.	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.	設之路面，縱向最大坡度為 1%，車道中心線兩側之各側車道橫向最大坡度應小於 2%，及兩側試驗車道外之橫向最大坡度應小於 3%。	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。
6.1.2 The test surface shall have a minimal peak braking coefficient (PBC) of 0.9, must be paved and may not contain any irregularities (e.g. large dips or cracks, manhole covers or reflective studs) within a lateral distance of 3.0m to either side of the centre of the test lane and with a longitudinal distance of 30m ahead of the VUT from the point after the test is complete.	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) within a lateral distance of 3.0m to either side of the test line(s) and with a longitudinal distance of 30m ahead of the VUT from the point after the test is complete.	3.12.5.1.2 試驗路面之最高煞車係數（PBC）應大於等於 0.9，試驗道路應為鋪設路面，試驗路徑之中心任一側 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）。	3.12.4.1.2 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）。
6.1.3 Lane Markings and Road Edge	5.1.3 Line Markings	3.12.5.1.3 車道標線與道路邊緣	3.12.4.1.3 車道標線
6.1.3.1 The tests described in this document require use of two different types of lane markings 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 and a	5.1.3.1 The LDW and LKA tests described in this document require use of two different types of lane markings conforming to one of the lane markings as defined in UNECE Regulation 130 to mark a lane with a	3.12.5.1.3.1 車道維持輔助系統、車道偏離輔助警示系統及緊急車道維持輔助系統試驗，其試驗車道寬度不得小於 3m。車道標線應使用白虛線，線段長 4 m，間距 6 m，線寬 10cm。路面邊線應使用白實線，線寬為	3.12.4.1.3.1 車道維持輔助系統及車道偏離輔助警示系統試驗，其試驗車道寬度不得小於 3m。車道標線應使用白虛線，線段長 4 m，間距 6 m，線寬 10cm。路面邊線應使用白實線，線寬為 15cm。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
road edge: 1. Dashed line with a width between 0.10 and 0.25m (0.10 and 0.15m for centerlines) 2. Solid line with a width between 0.10 and 0.25m 3. Road Edge consisting of grass and/or gravel or any other approved surrogate The inner edge of the lane marking shall be at 0.20 to 0.30m from the road edge (transition between paved test surface and road edge material), where applicable. The lane markings and/or road edge should be sufficiently long to ensure that there is at least 20m of marking remaining ahead of the vehicle after the test is complete.	width of 3.5 to 3.7m: 1. Dashed line with a width between 0.10 and 0.25m 2. Solid line with a width between 0.10 and 0.25m The lane markings should be sufficiently long to ensure that there is at least 20m of marking remaining ahead of the vehicle after the test is complete.	15cm。 道路邊緣由草地及/或砂礫或任何被認可之替代品所組成。 車道標線邊界內緣應距道路邊緣 0.20m 至 0.30m (鋪設試驗路面與道路邊緣材質間之過渡區)，如適用。 車道標線及/或道路邊緣應夠長，當車輛試驗完成後向前延伸至少 20m。	當試驗完成後，車輛前方之車道標線距離應確保至少有 20m。
			
Figure 4: Layout of the lane markings	Figure 3: Layout of the lane markings	圖 4：車道標線示意圖	圖 3：車道標線示意圖

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
6.1.4 Weather conditions		3.12.5.1.4 天氣條件	
6.1.4.1 Conduct tests in dry conditions with ambient temperature above 5°C and below 40°C.	5.1.4 Conduct tests in dry conditions with ambient temperature above 5°C and below 40°C.	3.12.5.1.4.1 試驗應於環境溫度 5°C 至 40°C 間之乾燥環境進行。	3.12.4.1.4 試驗應於環境溫度 5°C 至 40°C 間之乾燥環境進行。
6.1.4.2 No precipitation shall be falling and horizontal visibility at ground level shall be greater than 1km. Wind speeds shall be below 10m/s to minimise VUT disturbance.	5.1.5 No precipitation shall be falling and horizontal visibility at ground level shall be greater than 1km. Wind speeds shall be below 10m/s to minimise VUT disturbance.	3.12.5.1.4.2 降雨時不得進行試驗，且地面水平能見度應大於 1km。風速應小於 10m/s，以使受驗車輛干擾降至最低。	3.12.4.1.5 降雨時不得進行試驗，且地面水平能見度應大於 1km。風速應低於 10m/s，以使受驗車輛干擾應降至最低。
6.1.4.3 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. Ensure testing is not performed driving towards, or away from the sun when there is direct sunlight.	5.1.6 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. Ensure testing is not performed driving towards, or away from the sun when there is direct sunlight.	3.12.5.1.4.3 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，且除了受驗車輛之陰影外，不得有其他陰影籠罩試驗區域。當陽光直接照射時，應確保試驗時之車輛行進方向非直接朝向或背向陽光照射方向。	3.12.4.1.6 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，且除了受驗車輛之陰影外，不得有其他陰影籠罩試驗區域。當陽光直接照射時，應確保試驗時之車輛行進方向非直接朝向或背向陽光照射方向。
6.1.4.4 Measure and record the following parameters preferably at the commencement of every single test or at least every 30 minutes:	5.1.7 Measure and record the following parameters preferably at the commencement of every single test or at least every 30 minutes:	3.12.5.1.4.4 應於每次試驗開始前或至少每隔 30 分鐘，測量與記錄以下參數：	3.12.4.1.7 應於每次試驗開始前或至少每隔 30 分鐘，測量與記錄以下參數：

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
a) Ambient temperature in °C; b) Track Temperature in °C; c) Wind speed in m/s; d) Wind direction in azimuth ° and/or compass point direction (monitoring); e) Ambient illumination in Lux.	a) Ambient temperature in °C; b) Track Temperature in °C; c) Wind speed and direction in m/s; d) Ambient illumination in Lux.	(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，以m/s記錄； (4) 風向方位角及/或指南針所指方向（監測）； (5) 環境照度，以lux記錄。	(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。
6.2 VUT Preparation	**5.2 VUT Preparation**	3.12.5.2受驗車輛整備	3.12.4.2受驗車輛整備
6.2.1 System Settings	5.2.1 LKA and LDW System Settings	3.12.5.2.1 系統設定	3.12.4.2.1LKA與LDW系統設定
6.2.1.1 Set any driver configurable elements of the system (e.g. the timing of the Lane Departure Warning or the Lane Keep Assist if present) to the middle setting or midpoint and then next poorer performing setting similar to the examples shown in Figure 4. Lane centering functions should be turned OFF.	5.2.1.1 Set any driver configurable elements of the LKA and/or LDW system (e.g. the timing of the Lane Departure Warning or the Lane Keep Assist if present) to the middle setting or midpoint and then next latest setting similar to the examples shown in Figure .	3.12.5.2.1.1 系統之駕駛可調整之設定選項（例如：LKA 或 LDW 系統啟動時機，若有設置）調整至中間選項或距中間點位置但較晚發出警示之選項，如圖 5 所示。應關閉車道置中功能。	3.12.4.2.1.1 LKA 及/或 LDW 系統之駕駛可調整之設定選項（例如：LKA 或 LDW 系統啟動時機，若有設置）調整至中間選項或距中間點位置但較晚發出警示之選項，如圖 4 所示。

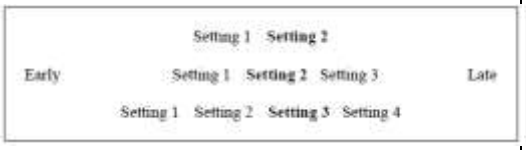
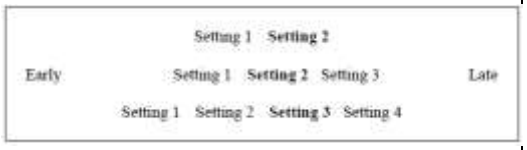
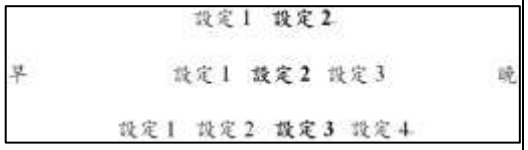
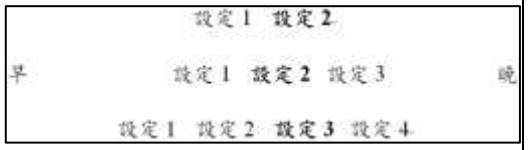

			

Figure 4: System setting for testing	Figure 4: LKA and/or LDW system setting for testing	圖 5：系統試驗設定	圖 4：LKA 及/或 LDW 系統試驗設定

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
6.2.2 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. Use inflation pressures corresponding to least loading normal condition. Run-in tyres according to the tyre conditioning procedure specified in 7.1.3. After running-in maintain the run-in tyres in the same position on the vehicle for the duration of the testing.	5.2.2 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. Use inflation pressures corresponding to least loading normal condition. Run-in tyres according to the tyre conditioning procedure specified in 6.1.3. After running-in maintain the run-in tyres in the same position on the vehicle for the duration of the testing.	3.12.5.2.2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。 依 3.12.6.1.3 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。	3.12.4.2.2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（least loading normal condition）相同。 依 3.12.5.1.3 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。
6.2.3 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	5.2.3 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	3.12.5.2.3 車輪定位測量（Wheel Alignment Measurement） 受驗車輛應以車輛業者之設定進行車輛幾何檢查（vehicle (in-line) geometry check），以紀錄其車輪定	3.12.4.2.3 車輪定位測量（Wheel Alignment Measurement） 受驗車輛應以車輛業者之設定進行車輛幾何檢查（vehicle (in-line) geometry check），以紀錄其車輪定

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
vehicle in kerb weight.	vehicle in kerb weight.	位，受驗車輛應為空車重量。	位，受驗車輛應為空車重量。
6.2.4 Unladen Kerb Mass	5.2.4 Unladen Kerb Mass	3.12.5.2.4 空車重量（Unladen Kerb Mass）	3.12.4.2.4 空車重量（Unladen Kerb Mass）
6.2.4.1 Fill up the tank with fuel to at least 90% of the tank's capacity of fuel.	5.2.4.1 Fill up the tank with fuel to at least 90% of the tank's capacity of fuel.	3.12.5.2.4.1 車輛燃油箱至少裝滿 90%容量的燃油。	3.12.4.2.4.1 車輛燃油箱至少裝滿 90%容量的燃油。
6.2.4.2 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.	5.2.4.2 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.	3.12.5.2.4.2 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。	3.12.4.2.4.2 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。
6.2.4.3 Ensure that the vehicle has its spare wheel on board, if fitted, along with any tools supplied with the vehicle. Nothing else should be in the car.	5.2.4.3 Ensure that the vehicle has its spare wheel on board, if fitted, along with any tools supplied with the vehicle. Nothing else should be in the car.	3.12.5.2.4.3 確認備胎及其他隨車工具已在車上，除此之外，車內不應有其他物品。	3.12.4.2.4.3 確認備胎及其他隨車工具已在車上，除此之外，車內不應有其他物品。
6.2.4.4 Ensure that all tyres are inflated according to the manufacturer's instructions for the least loading condition.	5.2.4.4 Ensure that all tyres are inflated according to the manufacturer's instructions for the least loading condition.	3.12.5.2.4.4 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）。	3.12.4.2.4.4 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）。
6.2.4.5 Measure the front and rear axle masses and determine the total mass of	5.2.4.5 Measure the front and rear axle masses and determine the total mass of	3.12.5.2.4.5 測量前軸及後軸重量，並計算車輛之總重量。此重量即為「空	3.12.4.2.4.5 測量前軸及後軸重量，並計算車輛之總重量。此重量即為「空

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
the vehicle. The total mass is the 'unladen kerb mass' of the vehicle. Record this mass in the test details.	the vehicle. The total mass is the 'unladen kerb mass' of the vehicle. Record this mass in the test details.	車重量」，將該數據記錄於試驗資料。	車重量」，將該數據記錄於試驗資料。
6.2.4.6 Calculate the required ballast mass, by subtracting the mass of the test driver and test equipment from the required 200 kg interior load.	5.2.4.6 Calculate the required ballast mass, by subtracting the mass of the test driver and test equipment from the required 200 kg interior load.	3.12.5.2.4.6 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。	3.12.4.2.4.6 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。
6.2.5 Vehicle Preparation	5.2.5 Vehicle Preparation	3.12.5.2.5 車輛整備	3.12.4.2.5 車輛整備
6.2.5.1 Fit the on-board test equipment and instrumentation in the vehicle. Also fit any associated cables, cabling boxes and power sources.	5.2.5.1 Fit the on-board test equipment and instrumentation in the vehicle. Also fit any associated cables, cabling boxes and power sources.	3.12.5.2.5.1 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。	3.12.4.2.5.1 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。
6.2.5.2 Place weights with a mass of the ballast mass. Any items added should be securely attached to the car.	5.2.5.2 Place weights with a mass of the ballast mass. Any items added should be securely attached to the car.	3.12.5.2.5.2 置放相當於配重重量（weights）。所有物品皆應穩當地固定於車內。	3.12.4.2.5.2 置放相當於配重重量（weights）。所有物品皆應穩當地固定於車內。
6.2.5.3 With the driver in the vehicle, weigh the front and rear axle loads of the vehicle.	5.2.5.3 With the driver in the vehicle, weigh the front and rear axle loads of the vehicle.	3.12.5.2.5.3 駕駛上車後，分別量測車輛前、後軸重量。	3.12.4.2.5.3 駕駛上車後，分別量測車輛前後軸重量。
6.2.5.4 Compare these loads with the 'unladen kerb mass'	5.2.5.4 Compare these loads with the "unladen kerb mass"	3.12.5.2.5.4 將上述車輛負載狀態與空車重量進行比較。	3.12.4.2.5.4 將上述車輛負載狀態與空車重量進行比較。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
6.2.5.5 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 car.	5.2.5.5 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 car.	3.12.5.2.5.5 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。	3.12.4.2.5.5 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。
6.2.5.6 Repeat paragraphs 6.2.5.3 and 6.2.5.4 until the front and rear axle loads and the total vehicle mass are within the limits set in paragraph 6.2.5.5. 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.	5.2.5.6 Repeat paragraphs 5.2.5.3 and 5.2.5.4 until the front and rear axle loads and the total vehicle mass are within the limits set in paragraph 5.2.5.5. 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.	3.12.5.2.5.6 重複 3.12.5.2.5.3 與 3.12.5.2.5.4 之動作，直到前後軸重量及車輛總重符合條文 3.12.5.2.5.5 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。試驗狀況應記錄受驗車輛之軸重。	3.12.4.2.5.6 重複 3.12.4.2.5.3 與 3.12.4.2.5.4 之動作，直到前後軸重量及車輛總重符合條文 3.12.4.2.5.5 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。試驗狀況應記錄受驗車輛之軸重。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
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 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.	5.2.5.7 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 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.	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 所示。	3.12.4.2.5.7 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 5 所示。

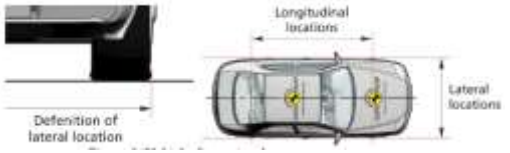
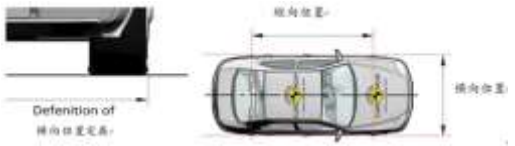
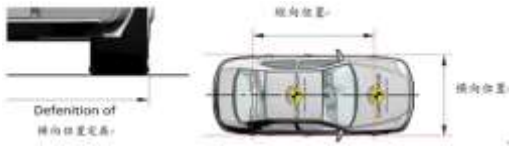
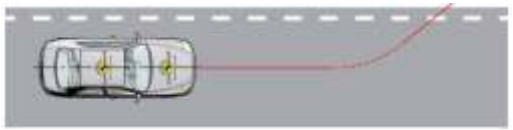
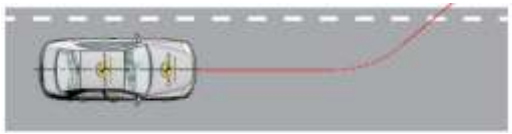
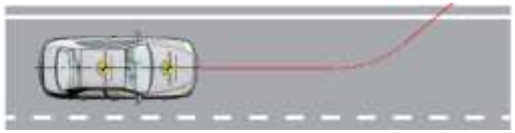

			

Figure 5: Vehicle dimensional measurements	Figure 5: Vehicle dimensional measurements	圖 6：車輛尺寸量測	圖 5：車輛尺寸量測

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
6.2.5.8 The vehicle's wheelbase and the lateral and longitudinal locations shall be measured and recorded.	5.2.5.7 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。	3.12.4.2.5.8 車輛軸距及橫向與縱向位置皆應量測並記錄。
7 TEST PROCEDURE	**6 TEST PROCEDURE**	3.12.6 試驗程序	3.12.5 試驗程序
7.1 VUT Pre-test Conditioning	**6.1 VUT Pre-test Conditioning**	3.12.6.1 受驗車輛試驗前調整	3.12.5.1 受驗車輛試驗前調整
7.1.1 General	6.1.1 General	3.12.6.1.1 一般通則	3.12.5.1.1 一般通則
7.1.1.1 A new car is used as delivered to the test laboratory, however a car may have been used for other Euro NCAP active safety tests.	6.1.1.1 A new car is used as delivered to the test laboratory.	3.12.6.1.1.1 以新車送至檢測機構；然而，車輛亦可能已用於其他 TNCAP 主動安全試驗。	3.12.5.1.1.1 以新車送至檢測機構。
7.1.1.2 If requested by the vehicle manufacturer and where not already performed for other tests, drive a maximum of 100km on a mixture of urban and rural roads with other traffic and roadside furniture to 'calibrate' the sensor system. Avoid harsh acceleration and braking.	6.1.1.2 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 system. Avoid harsh acceleration and braking.	3.12.6.1.1.2 若車輛業者要求且該車輛尚未執行其他試驗者，受驗車輛可行駛於市區及鄉村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。	3.12.5.1.1.2 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。
7.1.2 Brakes	6.1.2 Brakes	3.12.6.1.2 煞車	3.12.5.1.2 煞車
7.1.2.1 Condition the vehicle's brakes in the following manner, if it has not	6.1.2.1 If not performed already for other tests, or when the vehicle	3.12.6.1.2.1 若尚未完成或檢測機構尚未進行 100 公里的行駛，則依下列方	3.12.5.1.2.1 若尚未進行過其他試驗，或車輛業者要求，應依下列方式調節

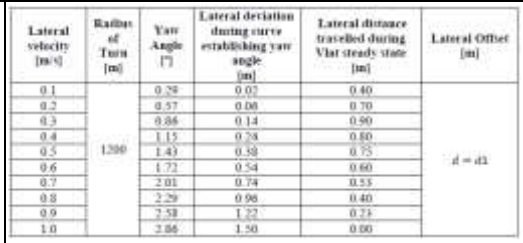
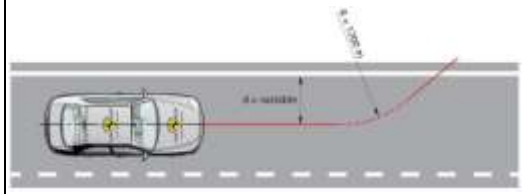
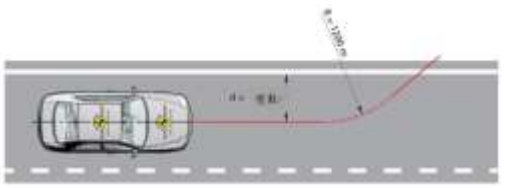
2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
been done before or in case the lab has not performed a 100km of driving: • Perform twenty stops from a speed of 56km/h with an average deceleration of approximately 0.5 to 0.6g. • Immediately following the series of 56km/h stops, perform 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 72km/h stops, drive the vehicle at a speed of approximately 72km/h for five minutes to cool the brakes.	manufacturer requests, condition the vehicle's brakes in the following manner: • Perform ten stops from a speed of 56km/h with an average deceleration of approximately 0.5 to 0.6g. • 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 72km/h stops, drive the vehicle at a speed of approximately 72km/h for five minutes to cool the brakes. •Initiation of the first test shall begin within two hours after completion of the brake conditioning	式調節車輛煞車： (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。 (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。 (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。	車輛煞車： (1) 自車速 56km/h 以平均減速度為 0.5 至 0.6g 之方式執行 10 次煞停。 (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。 (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。 (4) 第一項試驗必須於調整煞車後 2 小時內開始進行。
7.1.3 Tyres	6.1.3 Tyres	3.12.6.1.3 輪胎	3.12.5.1.3 輪胎

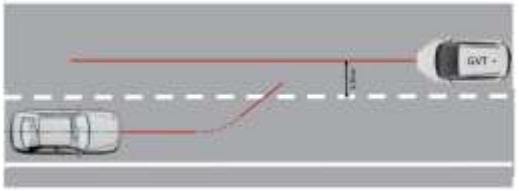
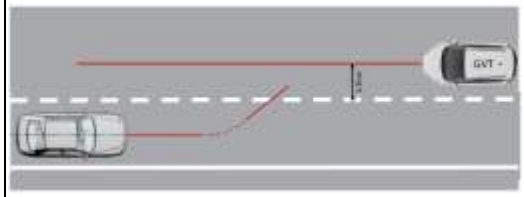
2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
7.1.3.1 Condition the vehicle's tyres in the following manner to remove the mould sheen, if this has not been done before for another test or in case the lab has not performed a 100km of driving: …	6.1.3.1 Condition the vehicle's tyres in the following manner to remove the mould sheen: …	3.12.6.1.3.1 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: …	3.12.5.1.3.1 以下列方式調節車輛輪胎，以磨除輪胎之毛邊: …
7.1.3.2 In case of instability in the sinusoidal driving, reduce the amplitude of the steering input to an appropriately safe level and continue the four passes.	6.1.3.2 In case of instability in the sinusoidal driving, reduce the amplitude of the steering input to an appropriately safe level and continue the four passes.	3.12.6.1.3.2 如正弦轉向模式（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。	3.12.5.1.3.2 如正弦轉向模式（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。
7.1.4 System Check	6.1.4 LKA/LDW System Check	3.12.6.1.4 系統檢查	3.12.5.1.4 車道維持輔助/車道偏離輔助警示系統檢查
7.1.4.1 Before any testing begins, perform a maximum of ten runs, to ensure proper functioning of the system.	6.1.4.1 Before any testing begins, perform a maximum of ten runs, to ensure proper functioning of the system.	3.12.6.1.4.1 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。	3.12.5.1.4.1 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。
7.2 Test Scenarios 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)	**6.2 Test Scenarios** 6.2.1 The performance of the VUT LSS is assessed in the LDW-SL, LDW-DL, LKA-SL scenarios as shown below.	3.12.6.2 試驗情境 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)	3.12.5.2 試驗情境 3.12.5.2.1 車道輔助系統之受驗車輛性能，應以下圖所示之 LDW–實線、LDW–虛線、LKA–實線情境進行評等。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
- Lane Keep Assist - Lane Departure Warning There is no specific performance test for Blind Spot Monitoring Systems (warning only). 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.	 LDW-Solid Line  LDW-Dashed Line  LKA-Solid Line (Full lane marking)	(2) 車道維持輔助系統 (3) 車道偏離輔助警示系統 無盲點監測系統之特定性能試驗(僅警示) 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。	 車道偏離輔助警示系統–實線  車道偏離輔助警示系統–虛線  車道維持輔助系統–實線(完整車道標線)
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 necessary to perform the tests.	6.2.2 For testing purposes, assume an initial straight line path followed by a fixed radius of 1200m 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 necessary to perform the tests.	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。	3.12.5.2.2 試驗過程中，假設試驗路徑一開始為直線，緊接以固定半徑 1200 公尺弧度，再接著又為直線之路徑。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。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
	6.2.3 LDW tests will be performed with lateral velocities of 0.3m/s and 0.5m/s for both left and right hand side departures. 6.2.4 LKA tests will be performed with 0.1 m/s incremental steps (see 6.4.5) within the lateral velocity range of 0.1 to 1.0m/s for both left and right hand side departures. For lateral velocities of 0.6m/s and greater, continue testing as long as the LKA system continues to intervene.		3.12.5.2.3 車道偏離輔助警示系統試驗應以側向速度為 0.3m/s 與 0.5m/s，分別執行左右側車道偏離試驗。 3.12.5.2.4 車道維持輔助系統試驗應在側向速度為 0.1 至 1.0m/s 範圍內，以每次增加 0.1 m/s 側向速度（參 3.12.5.4.5）分別執行左右側車道偏離試驗。若側向速度等於或大於 0.6m/s，且 車道維持輔助系統仍持續介入即可繼續進行試驗。
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	6.2.4.1 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 LKA intervention for each test. Otherwise for each lateral velocity, two calibration runs shall be performed in order to determine when the LKA activates. Compare steering wheel torque, vehicle speed or yaw rate of both runs and determine where there is	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。	3.12.5.2.4.1 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 LKA 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 LKA 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 LKA 系統介入時機。

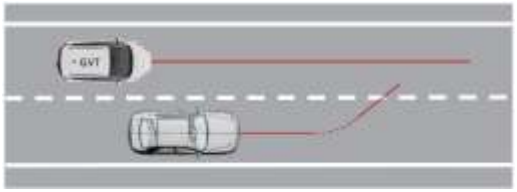
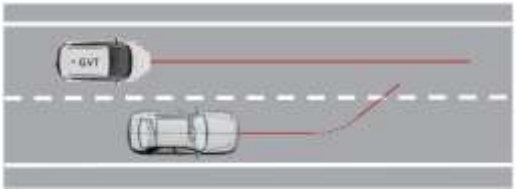
2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
a notable difference that identifies the location of intervention.	a notable difference that identifies the location of LKA intervention.		
Run 1: Complete the required test path with the system turned OFF and measure the control parameter	Run 1: Complete the required test path with LKA turned OFF and measure the control parameter	第一趟：關閉系統狀態下完成要求之試驗路徑，以及量測控制參數。	第一趟：關閉車道維持輔助系統狀態下完成要求之試驗路徑，以及量測控制參數。
Run 2: Complete the required test path with the system turned ON and measure the control parameter	Run 2: Complete the required test path with LKA turned ON and measure the control parameter	第二趟：開啟系統狀態下完成要求之試驗路徑，以及量測控制參數。	第二趟：開啟車道維持輔助系統狀態下完成要求之試驗路徑，以及量測控制參數。
7.2.2.2 Complete the tests while ending the closed loop control before system activation as defined in 7.2.2.1. In the case of calibration runs the release of steering control should occur on the test path and no less than 5m longitudinally before the location of intervention.	6.2.4.2 Complete the LKA tests while ending the closed loop control before LKA activation as defined in 6.2.4.1. In the case of calibration runs the release of steering control should occur on the test path and no less than 5m longitudinally before the location of LKA intervention.	3.12.6.2.2.2 系統啟動前結束閉迴路控制下，如 3.12.6.2.2.1 規範。於試驗路徑進行之校準行駛，應至少於介入位置前之縱向 5m 處解除(release)轉向控制。	3.12.5.2.4.2 車道維持輔助系統啟動前結束閉迴路控制下，完成車道維持輔助系統試驗，如 3.12.5.2.4.1 規範。於試驗路徑進行之校準行駛，應至少於車道維持輔助系統介入位置前之縱向 5m 處解除(release)轉向控制。
7.2.3 The following parameters should be used to create the test paths: (請參考末頁表格)	6.2.5 The following parameters should be used to create the test paths:	3.12.6.2.3 應使用以下參數建置試驗路徑： (請參考末頁表格)	3.12.5.2.5 應使用以下參數建置試驗路徑：

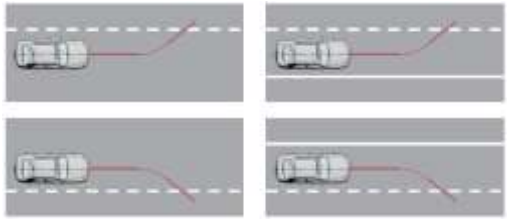
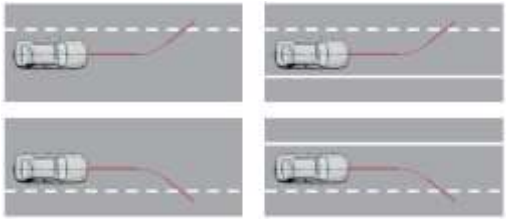
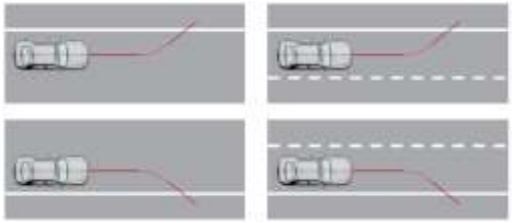
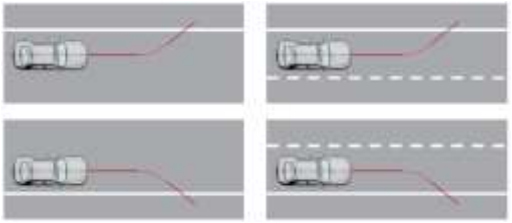
2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
Where the lateral offset d from the lane marking or road edge: d = d1 + d2 + Half of the vehicle width (m) With: d1: Lateral distance travelled during curve establishing yaw angle (m) d2: Lateral distance travelled during V_{lat} steady state (m) (請參考末頁圖示)	 Where the offset from lane marking (d1): d1 = Lateral distance travelled during Vlat steady state (m) + Lateral deviation during curve establishing yaw angle (m) + Half of the vehicle width (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） (請參考末頁圖示)	 車道標線偏離（d1）: d1 = 越線側向速度穩定狀態之側向偏離距 離（m） + 橫擺角曲線建立時之側向偏離距離（m） + 車輛寬度的一半（m） 
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. (請參考末頁圖示)		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。 (請參考末頁圖示)	

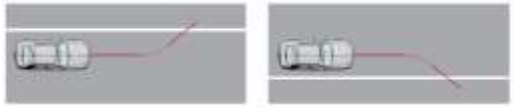
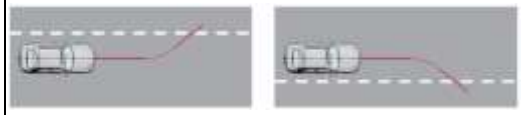
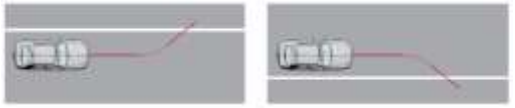
2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
7.2.4.2 Oncoming vehicle 7.2.4.2.1 For the oncoming scenario the GVT will follow a straight line path in the lane adjacent to the VUT's initial position, in the opposite direction to the VUT. The straight line path of the target will be 1.5m from the inner side of the centre dashed lane marking.		3.12.6.2.4.2 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。	
7.2.4.2.2 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 10% overlap (assuming no system reaction) of the width of the VUT. 		3.12.6.2.4.2.2 同步受驗車輛及全球目標車之路徑，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）。 	
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		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。	

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
departures at the driver side only. 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 path of the target will be 1.5m from the inner side of the centre dashed lane marking. 7.2.4.3.2 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). 7.2.4.3.3 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		3.12.6.2.4.3 車道超車試驗 3.12.6.2.4.3.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中之虛線標線內側 1.5m。 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)。 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	

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
0.7m/s for intentional lane changes for departures at the driver side only. 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) - 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}: (請參考末頁表格) Where the lateral offset d from the lane marking: d = d1 + d2 + Half of the vehicle width (m) With:		駕駛側之偏離。 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 超車受驗車輛 @ 72km / h（相對速度為 8km / h） 3.12.6.2.4.3.4 應使用以下參數作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: (請參考末頁表格) 車道標線的側向偏移量: d = d1 + d2 +車輛寬度的一半(m) 以及:	

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
d1: Lateral distance travelled during curve establishing yaw angle (m) d2: Lateral distance travelled during V_{lat} steady state (m)  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. (請參考末頁圖示) 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 sides of the vehicle.		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）  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。 (請參考末頁圖示) 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。	

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
			
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.		3.12.6.2.5.3 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。	
			
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 performance during LKA or ELK		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，可併在車道維持輔助系統或緊急車道維持輔助系統	

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
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  **7.3 Test Conduct** 7.3.1 Before every test run, drive the	**6.3 Test Conduct**	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。  3.12.6.3 試驗規範（Test Conduct） 3.12.6.3.1 每次試驗前，受驗車輛應以	3.12.5.3 試驗規範（Test Conduct）

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
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.	6.3.1 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.	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)。	3.12.5.3.1 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)。
7.3.2 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.	6.3.2 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.	3.12.6.3.2 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。	3.12.5.3.2 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。
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。
7.4 Test Execution		3.12.6.4 試驗執行	
7.4.1 Accelerate the VUT to 72 km/h.	**6.4 Test Execution**	3.12.6.4.1 受驗車輛加速至 72km/h。	3.12.5.4 試驗執行

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
7.4.2 Where applicable accelerate the target vehicle to 72km/h or 80km/h depending on the test scenario.	6.4.1 Accelerate the VUT to 72 km/h.	3.12.6.4.2 依試驗情境，全球目標車加速至 72km / h 或 80km / h。	3.12.5.4.1 受驗車輛加速至 72km/h。
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 ± 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 (upto T_{STEER}) 0 ± 1.0 °/s - Steering wheel velocity (upto T_{STEER}) 0 ± 15.0°/s	6.4.2 The test shall start at T_0 and is valid when all boundary conditions are met between T_0 and T_{LKA}/T_{LDW}: - Speed of VUT (GPS-speed) 72 ± 1.0km/h - Lateral deviation from test path 0 ± 0.05m - Steady state lane departure lateral velocity ± 0.05m/s - Steering wheel velocity ± 15.0°/s	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: (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	3.12.5.4.2 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: (1) 受驗車輛速度（GPS - 速度）72 ± 1.0km/h (2) 行駛路徑側向偏離距離 0 ± 0.05m (3) 穩定狀態之車道偏離側向速度 ±0.05m/s (4) 方向盤轉速 ± 15.0°/s

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
ELK oncoming scenarios: - Speed of GVT (GPS-speed) 72 ± 1.0km/h - Lateral deviation from test path GVT 0 ± [0.30]m ELK Overtaking scenarios: - Relative longitudinal speed 0 or 8 ± 1.0km/h - Relative longitudinal distance @ 0km/h relative velocity 0 ± [0.20]m @ 8km/h relative velocity x ± [0.20].m Lateral deviation from test path GVT 0 ± 0.20m		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 緊急車道維持輔助系統之車道超車情境試驗: (1) 相對縱向速度 0 或 8± 1.0km/h (2) 相對縱向距離 (A) 0km/h 相對速度 0±0.20m (B) 8km/h 相對速度 x ± 0.20m (C) 全球目標車行駛路徑側向偏移量 0 ± 0.20m	
7.4.3.1 Steer the vehicle as appropriate to achieve the lateral velocity in a smooth controlled manner and with minimal overshoot	6.4.2.1 Steer the vehicle as appropriate to achieve the lateral velocity in a smooth controlled manner and with minimal overshoot	3.12.6.4.3.1 應盡可能控制車輛使其平穩且在最小偏離條件下達到規定之側向速度。	3.12.5.4.2.1 應盡可能控制車輛使其平穩且在最小偏離條件下達到規定之側向速度。
7.4.4 The end of an LDW test is considered as when the warning	6.4.3 The end of an LDW test is	3.12.6.4.4 車道偏離輔助警示系統試驗結束時機點為警示啟動時。	3.12.5.4.3 車道偏離輔助警示系統試驗

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
commences.	considered as when the warning commences.		結束時機點為警示啟動時。
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.	6.4.4 The end of an LKA test is considered as when one of the following occurs: - The LKA system fails to maintain the VUT within the permitted lane departure distance. - The LKA 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.	3.12.6.4.5 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。	3.12.5.4.4 車道維持輔助系統試驗結束時機點為下述任一情況發生時： (1) 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。
7.4.6 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	The test is considered complete 2 seconds after one of the above occurs.	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，為下述任一情況發生時： (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	上述任一情況發生兩秒後，試驗視同結束。

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
collision between the VUT and target vehicle. This can be assumed when 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. 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.		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： (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，未偵測到系統介入。 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。 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/ 受驗車輛之轉向控制達成。	

2019 年版 Euro NCAP 規章	2017 年版 Euro NCAP 規章	修訂 TNCAP 條文草案	對應 TNCAP 條文
7.4.7 The subsequent lateral velocity for the next test is incremented with 0.1m/s.	6.4.5 The subsequent lateral velocity for the next test is incremented with 0.1m/s.	3.12.6.4.7 下一次試驗之側向速度應增加 0.1m/s。	3.12.5.4.5 下一次試驗之側向速度應增加 0.1m/s。

2019年Euro NCAP規章

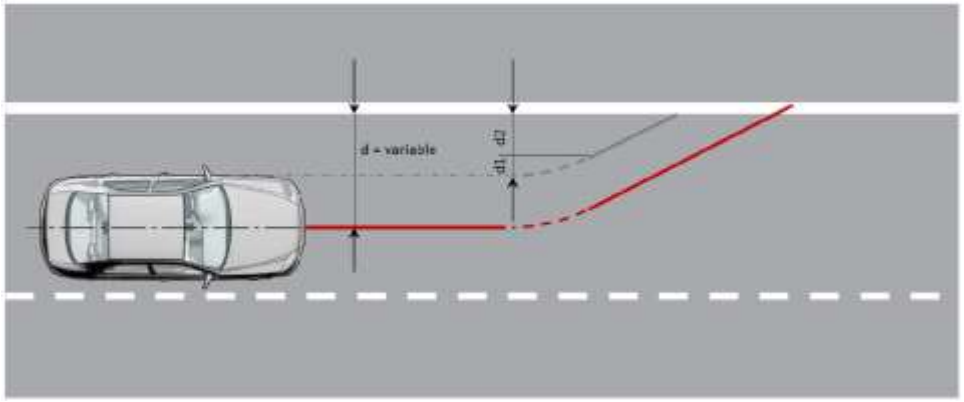
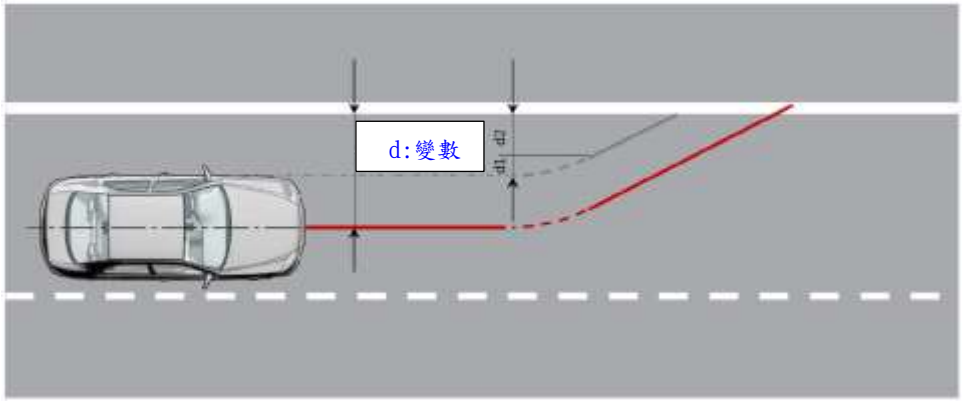
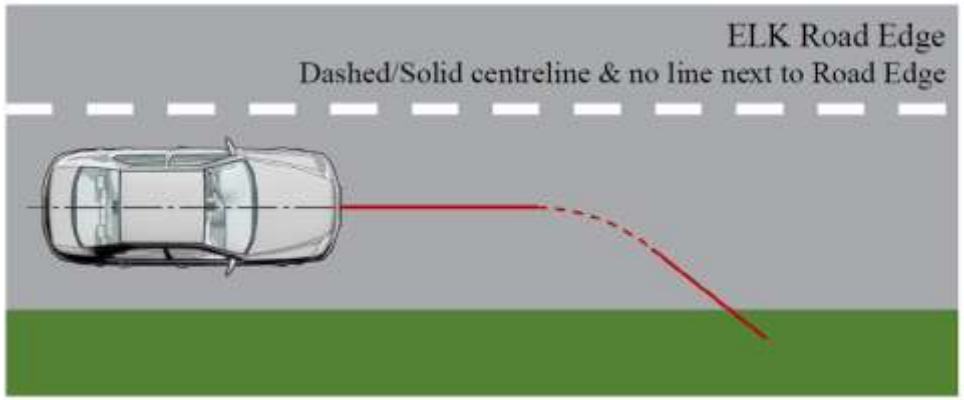
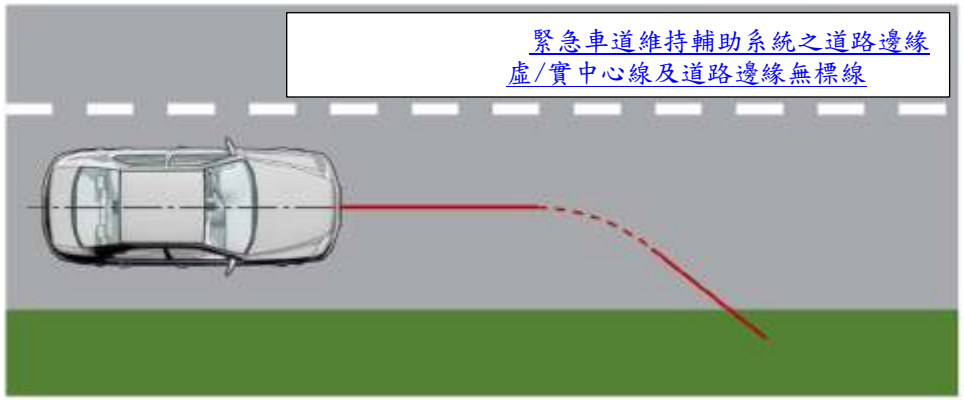
7.2.3

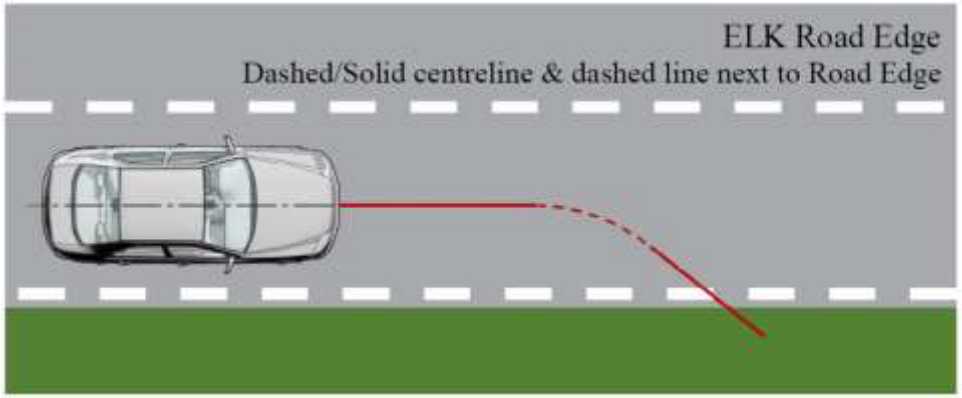
Vlat,VUT [m/s]	**R [m]**	**ΨVUT [°]**	**d1 [m]**	**d2 [m]**
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80
0.5		1.43	0.38	0.75
0.6		1.72	0.54	0.60

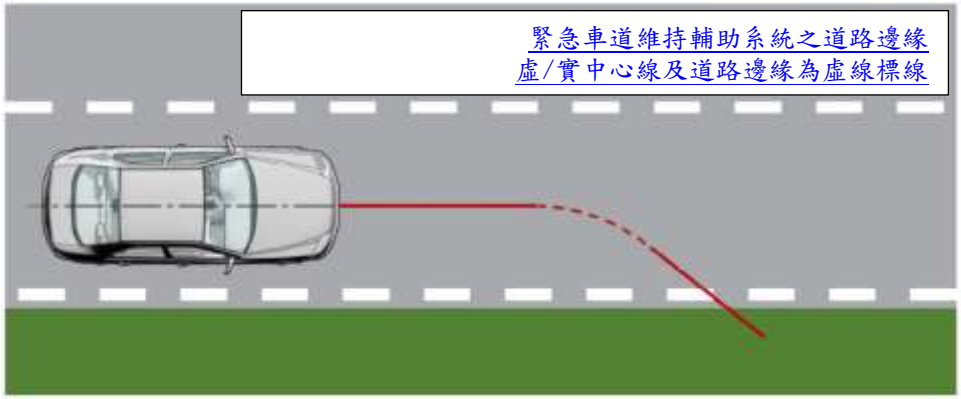
修訂TNCAP條文草案

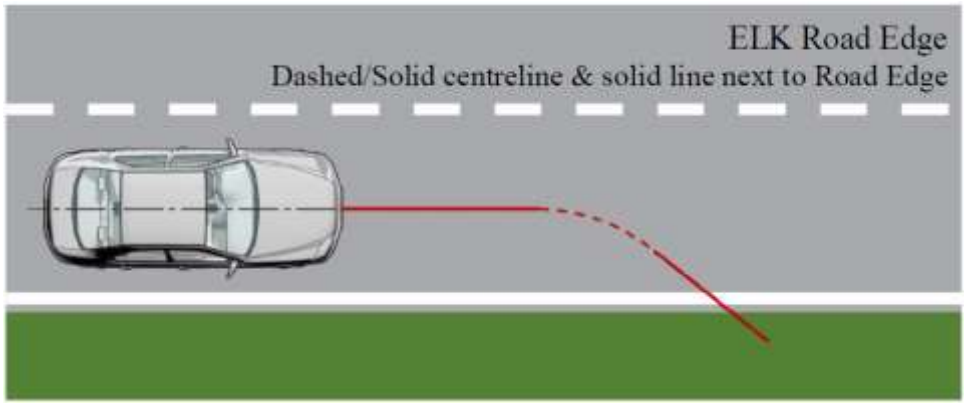
3.12.6.2.3

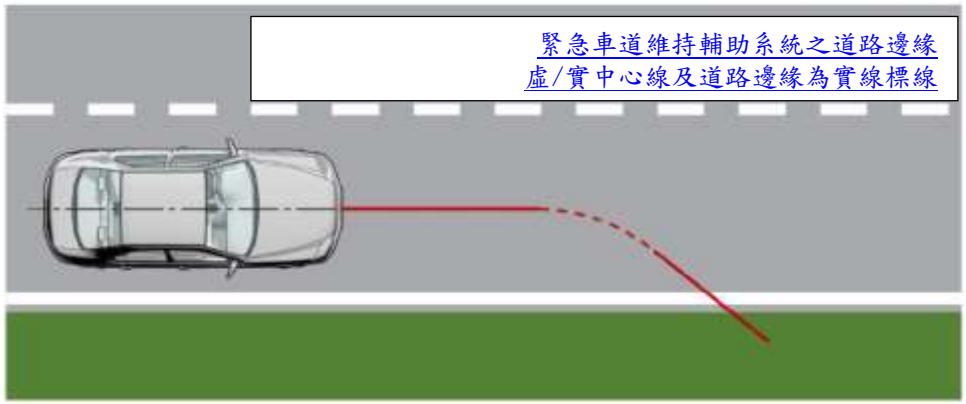
側向速度,受驗車輛 [m/s]	**轉彎半徑 [m]**	**試驗過程中受驗車輛之橫擺角速度[°]**	**橫擺角曲線建立時之側向偏離[m]**	**側向速度穩定狀態之側向偏離距離 [m]**
0.2	1200	0.57	0.06	0.70
0.3		0.86	0.14	0.90
0.4		1.15	0.24	0.80
0.5		1.43	0.38	0.75
0.6		1.72	0.54	0.60

	
2019年Euro NCAP規章	修訂TNCAP條文草案
7.2.4.1 	3.12.6.2.4.1 









2019年Euro NCAP規章

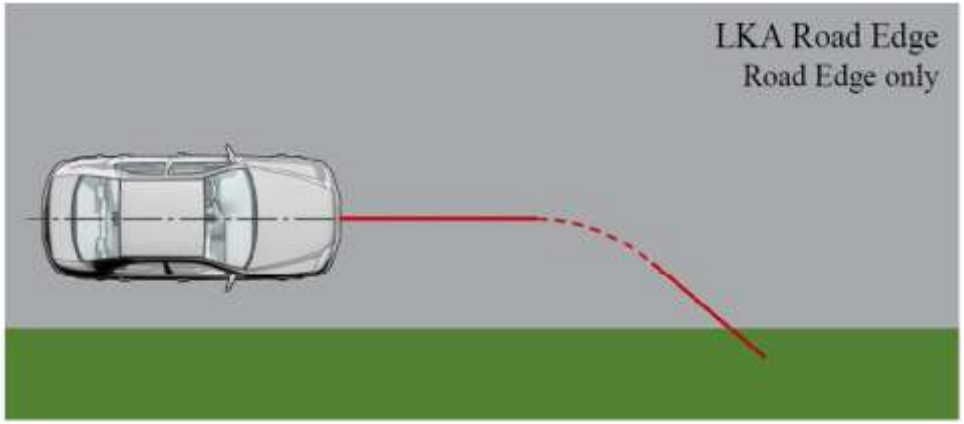
7.2.4.3.4

Vlat,VUT [m/s]	**R [m]**	**Ψ_{VUT} [°]**	**d1 [m]**	**d2 [m]**
0.5	800	1.43	0.25	0.75
0.6		1.72	0.36	0.60
0.7		2.01	0.49	0.53

修訂TNCAP條文草案

3.12.6.2.4.3.4

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]**
0.5	800	1.43	0.25	0.75
0.6		1.72	0.36	0.60
0.7		2.01	0.49	0.53

2019年Euro NCAP規章	修訂TNCAP條文草案
7.2.5.1 	3.12.6.2.5.1