5.3.4 Human Machine Interface (HMI)

A maximum of 0.5 points is available for HMI. Points can be achieved for the following:

- Supplementary warning for the FCW system 1 point

In addition to the required audio-visual warning, a more sophisticated warning like head-up display, belt jerk, brake jerk or any other haptic feedback is awarded when it is issued at a TTC > 1.2s. This is only valid for cases where the AEB system is not able to fully avoid the impact at full overlap.

NOTE: The supplementary warning point is not applicable to AEB only systems

- Reversible pre-tensioning of the belt in the pre-crash phase 1 point

When the system detects a critical situation that can possibly lead to a crash, the belt can already be pre-tensioned to prepare for the oncoming impact.

The normalised HMI score is calculated by dividing the points achieved by 2.

5.3.5 Total AEB Car-to-Car Score

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

$$
\begin{aligned}
&(CCR\ AEB\ score\ x\ CCR\ AEB\ Correction\ factor\ x\ 2.0)\\
&+(CCR\ FCW\ score\ x\ CCR\ FCW\ Correction\ factor\ x\ 1.5)\\
&+(CCFtap\ score\ x\ 2.0)\\
&+(HMI\ score\ x\ 0.5)\\
&\hline
&\boldsymbol{AEB\ CartoCar\ total\ score}
\end{aligned}
$$

5.3.5.1 Scoring Example

AEB Car-to-Car	Points	Correction factor	Percentage	Score
CCR AEB			**91.0%**	**1.820**
CCRs	13.750	1.026	100%	
CCRm	14.334	1.026	98.0%	
CCRb	3.000	-	75.0%	
CCR FCW			**84.9%**	**1.274**
CCRs	11.950	1.016	82.8%	
CCRm	10.500	1.016	97.0%	
CCRb	3.000	-	75.0%	
CCFtap	**5.000**		**55.6%**	**1.112**
HMI	**1.000**		**50%**	**0.250**
TOTAL	**4.456**			

6.3.3 Emergency Lane Keeping (ELK)

From 2020 onwards, to be eligible for scoring points in ELK, the ELK part of the LSS system needs to be default ON at the start of every journey and deactivation of the system should not be possible with a momentary single push on a button.

For ELK Road Edge and Solid line 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.

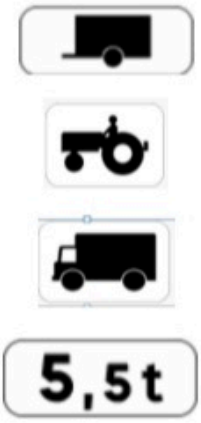
The limit value for DTLE for ELK Solid line tests is set to -0.3m for testing against lines, meaning that the ELK system must not permit the VUT to cross the inner edge of the lane marking by a distance greater than 0.3m.

For ELK tests with oncoming and overtaking vehicles, the assessment criteria used is no impact, meaning that the VUT is not allowed to contact the overtaking or oncoming vehicle target at any time during the test.

The 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:

ELK Scenario	Road Marking	Points
Road Edge	Road Edge only	0.25
	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
Solid Line	Single lane marking	0.50
Oncoming Vehicle	Fully marked lanes	1.00
Overtaking Vehicle	Fully marked lanes	0.50
TOTAL		**3.00**

Other vehicle/weight categories

	France	Germany	Netherlands	Sweden	United Kingdom
VEHICLE AND/OR WEIGHT					

Implicit Speedlimits

	France	Germany	Netherlands	Sweden	United Kingdom
HIGHWAY AND/OR MOTORWAY					
CITY ENTRY AND/OR CITY EXIT					
RESIDENTIAL ZONES