

**Driver assistance and
active safety functions**

Convenor: Mr. Éric FENAUX

Doc. Number: **ISO/TC 22/SC 33/WG 3 N 043**

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Date: **2018-04-23**

Results of voting on ISO CD 22735 Road vehicles --Test method to evaluate the performance of lane-keeping assistance systems

**COMMENTS/
DECISIONS**

-

EXPECTED ACTION

For information and consideration at the WG 3 meeting, to be held on 2018-04-26 in Berlin.

SOURCE

ISO balloting portal

Result of voting

Ballot Information

Ballot reference	ISO/CD 22735
Ballot type	CD
Ballot title	Road vehicles --Test method to evaluate the performance of lane-keeping assistance systems
Opening date	2018-02-22
Closing date	2018-04-19
Note	

Member responses:

Votes cast (17)	Austria (ASI) Belgium (NBN) Canada (SCC) China (SAC) Ethiopia (ESA) France (AFNOR) Germany (DIN) Italy (UNI) Japan (JISC) Korea, Republic of (KATS) Netherlands (NEN) Russian Federation (GOST R) Saudi Arabia (SASO) Spain (UNE) Sweden (SIS) United Kingdom (BSI) United States (ANSI)
Comments submitted (2)	Belarus (BELST) Egypt (EOS)

Votes not cast (0)

Questions:

Q.1	"Do you approve the circulation of the draft as a DIS?"
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Votes by members	Q.1
Austria (ASI)	Abstention
Belgium (NBN)	Abstention
Canada (SCC)	Approval
China (SAC)	Disapproval

Ethiopia (ESA)	Approval
France (AFNOR)	Abstention
Germany (DIN)	Abstention
Italy (UNI)	Approval
Japan (JISC)	Approval with comments
Korea, Republic of (KATS)	Approval with comments
Netherlands (NEN)	Approval
Russian Federation (GOST R)	Approval
Saudi Arabia (SASO)	Approval
Spain (UNE)	Abstention
Sweden (SIS)	Approval with comments
United Kingdom (BSI)	Abstention
United States (ANSI)	Approval

Answers to Q.1: "Do you approve the circulation of the draft as a DIS?"		
7 x	Approval	Canada (SCC) Ethiopia (ESA) Italy (UNI) Netherlands (NEN) Russian Federation (GOST R) Saudi Arabia (SASO) United States (ANSI)
3 x	Approval with comments	Japan (JISC) Korea, Republic of (KATS) Sweden (SIS)
1 x	Disapproval	China (SAC)
6 x	Abstention	Austria (ASI) Belgium (NBN) France (AFNOR) Germany (DIN) Spain (UNE) United Kingdom (BSI)

Comments from Voters		
Member:	Comment:	Date:
China (SAC)	Comment File	2018-04-19 09:44:45
CommentFiles/ISO_CD 22735_SAC.docx		

France (AFNOR)	Comment File	2018-04-19 17:44:49
CommentFiles/ISO_CD 22735_AFNOR.docx		
Germany (DIN)	Comment File	2018-04-12 16:37:20
CommentFiles/ISO_CD 22735_DIN.doc		
Japan (JISC)	Comment File	2018-04-10 03:39:08
CommentFiles/ISO_CD 22735_JISC.doc		
Korea, Republic of (KATS)	Comment File	2018-04-17 06:41:36
CommentFiles/ISO_CD 22735_KATS.doc		
Sweden (SIS)	Comment File	2018-04-18 20:35:30
CommentFiles/ISO_CD 22735_SIS.docx		

Comments from Commenters		
Member:	Comment:	Date:
Belarus (BELST)	Comment	2018-04-02 13:10:05
Approve		
Egypt (EOS)	Comment	2018-04-10 20:25:41
we abstain		

Template for comments and secretariat observations

Date:2018-04-23

Document: ISO CD 22735

Project:

MB/ NC ¹	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment ²	Comments	Proposed change	Observations of the secretariat
FR1 001				ge	France voted abstention as the status of the IPR shall be clarified, before progressing to the next stage. Euro NCAP published a document on lane keeping assistance system.	SC 33 shall officially ask Euro NCAP how ISO could globally standardize this protocol: - either to refer to Euro NCAP protocol in the standard, - or for ISO to withdraw any copyright claiming on this future standard.	
DE 1 002				Ge	No voting due to non-active participation at the WG3. Aligned efforts with EuroNCAP and ACEA-EuroNCAP Working groups is recommended. This should keep EuroNCAP and ISO-Procedures on the same level. This would increase acceptance and support by the German delegation. Without this alignment the risk is seemed that the ISO-Status is always just a "historic"-document.		
JP1 003				ge	In general, a comma (,) is used for decimal point in ISO description instead of a dot (.).	A dot for decimal point shall be replaced with a comma.	
SE 004				ge	Harmonized naming of variable names.	Add reference to ISO/TS 13499 and adopt terminology	
SE 005				ge	When there are calculated variables, it should be cleared how these are calculated		
KR 1 006			Fig. 1	te	Use same terminology	Change "Offset" to "Lateral offset" in Fig. 1	
KR 1 007		02.00		te	Add EuroNCAP test protocol either at Clause 2 or Reference	Add Euro NCAP LSS Test Protocol v2.0.1	

1 **MB** = Member body / **NC** = National Committee (enter the ISO 3166 two-letter country code, e.g. CN for China; comments from the ISO/CS editing unit are identified by **)

2 **Type of comment:** **ge** = general **te** = technical **ed** = editorial

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JP2 008	1	03.02		ed	Lane keeping assist system	Correctly, Lane keeping assistance system	
JP3 009	2	03.04		ed	Lane Departure Warning system is out of the scope	Description should be changed to Vehicle tested according to this protocol with Lane keeping assistance system	
JP4 010	1	04.02		ed	A word "offset" may be mistaken for "Lateral Offset in 7.2 Table 1	The title of 4.2 and Figure 2 shall be changed to "Lateral Deviation from Path" same as the definition of Y_{VUT} error.	
KR 1 011		04.02		ed	Variable name in subscript	Change "YVUT error" to " $Y_{VUT \text{ error}}$ "	
KR 1 012		04.02	Fig. 1	te	Clarification of "intended straight line"	Add "intended line" to the Fig. 1	
JP5 013	13	04.03		ed	A lack of dot for expression of differential	A dot shall be added to $Alat_{VUT}$	
KR 1 014		04.03			Use normal font instead of bold font for variables which are not vector quantity	Change font of all varialbes in 4.3 to normal font, not bold font.. T, X, Vlong, Vlat, V, Phi, Omega, M, Alat	
SE 015	7	04.03		te	Speed of VUT is already stated to be recorded during entire test.	Remove requirement on speed for VUT when passing line. Speed when crossing line is derived from lat/long of line.	

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SE 016	10	04.03		te	What is the purpose of measuring steering wheel torque?	Motivate measurement or remove.	
SE 017	12	04.03		te	What is the purpose of measuring lateral jerk?	Motivate measurement or remove	
JP6 018	6	05.01		ed	A lack of unit for heading angle	Correctly, 0,1 deg.	
JP7 019	2	05.02		ed	Description might be unified from “must” to “shall”	Description might be changed to “In addition, it shall be ensured...”	
JP8 020	1	06.02.2		ed	“and “ in the title is error, and “Line Marking” isn’t used in this chapter.	The title shall be changed to “Lane marking” same as general description like 18 EuroNCAP	
SE 021	1	06.02.2		ed	Heading of 6.2.2 is incomplete	Remove “and”	
SE 022	1	06.03		te	Lower ambient temperature should be allowed	Propose either -5 or -10 °C as lower limit.	
SE 023		06.03		ge	Weather conditions are not the same, both parameters and values as for AEB.	Weather conditions should be harmonized with 22733-1 (AEB)	
SE 024	5	06.03		te	Ambiguous requirement on sunlight. E.g. is driving south ok at 12.00 in direct sunlight?	Add more specific criteria.	

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SE 025	8	06.03		te	Track temperature is recorded without required range.	Add required range of track temperature or remove requirement to record.	
JP9 026	2	06.04.2	Figure 4	te	Description of NOTE is proper for ISO standard, but it's conceptual for test method. And the setting used in the test should be treated same as the other vehicle condition described as 6.4.1 General condition.	Remove sentence from "the middle setting..." to "in Figure 4." and figure 4 itself. Instead of it, "to one setting throughout the test and it should be recorded with its result.	
JP10 027	13	06.04.3		ed	kPa1)	Correctly, kPa	
SE 028	9	06.04.3		ed	kPa1 must be a typo	Correct	
SE 029		07.01.2		te	LKAS systems do not use brakes.	Remove requirement on brake conditioning.	
SE 030		07.02		ge	Number of test scenarios unclear.	All setups need to be mentioned. Right and left Solid and Dashed. Combinations of Solid and dashed.	
JP11 031		07.02	Figure 6	te	Positive direction of Y axis on each scenario is wrong for Figure 1 in 4.1	Remove axes of X and Y, or correct Y direction	
JP12 032		07.02, 7.3		ed	The page number error	The page number of 10 and 11 should be exchanged	

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JP13 033	3	07.04		ed	Suffix error (T0, TLKAS)	Correctly, T ₀ , T _{LKAS}	
JP14 034	4	07.04		te	Speed of VUT may be measured by various equipment for each test labo, and it may be advancing together with the generation.	Since the tolerance of speed is restricted by specific number, GPS-speed as measurement equipment should be removed	
JP15 035	4	07.04		te	Some system may control its activation speed strictly like 72,0 km/h, and some equipment for vehicle speed may has much tolerance or there may be some inequality.	Definition of tolerance for speed of VUT should be 72km/h + 2,0km/h to guarantee its activation	
JP16 036	10	07.04		te	Since there is no assessment criterion for the test, a word "permitted" is not suitable to show deactivation of the system.	"permitted" should be correct "intended"	
SE 037		07.04		te	Missing parameter ranges.	Force and jerk are mentioned earlier, what are the limits/conditions for a valid test?	
SE 038	9	07.04		te	Permitted lane departure distance is not defined.	Which part/reference point of VUT the departure distance refers to.	
JP17 039	2	A.1		ed	The name of "Road Marking" came from ISO 11270 is "National road marking" correctly, and it has wide sense definition than Lane marking as described in this draft.	The sentence from "For the application of ..." to "... ISO 11270:2014" should be moved to before the description "A.1 General" or the word "Road marking"	
SE 040		A.1		ed	Unclear meaning of tick box spanning all countries used for "Left edge lane marking" or "Right edge lane marking."	Clarify how to interpret tick boxes spanning multiple countries.	

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KR 1 041		Scope		te	Improve the scope for clear statement of scope.	This international standard specifies test methods to evaluate the behaviour of a vehicle equipped with LKAS (Lane Keeping Assistance System, See 3.2) whose purpose is to keep the vehicle within a lane at different driving situations . For this purpose relevant vehicle dynamic variables that are useful to can assess the behaviour performance , dynamic stability as well as controllability of a vehicle with LKAS and their measurement methods are defined.	
KR 1 042		title		te	This document is for performance evaluation, not for specifying requirements. Also need aligning to the title of ISO 2273301. thus change the title as:	Road vehicles — Performances evaluation of lane-keeping assistance systems — Requirements and test methods	

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File: ISO_CD 22735_SAC.docx (CHINA)

Date	MB/NC	Project Nr.
19.04.2017	CN	ISO 22735

No	Line	Clause	COMMENTS	Proposed change
1			The value of permitted lane departure distance is not clearly defined.	For example, this value is 0.4m defined in E-NCAP assessment.
				We suggest to define how many tests should be completed under the same scenario.
				We suggest to clarify which test parameter should be recorded. For example: lateral speed, lateral acceleration, distance between tyre outside and line, time of LKA activation.
				How to define the distance between tyre to the line. From tyre outside to inside of lane or outside/middle of lane? That should be clearly defined.
			In all, the testing method is as the same as E-NCAP.	We suggest that it may need more discussion and consideration for making international standards.

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