

## Template for comments and secretariat observations

Date:2022-07-26

Document: TC7\_SC4\_P3\_N037

Project: TC 7/SC 4/p 3

MB/ NC <sup>1</sup>	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
NL 001	1			ge	There are a lot of references to OIML D 11 and D 31. This is not according OIML drafting rules	Replace references with the appropriate text.	REJECTED  I cannot find, where this requirement is stated!  As I understand, the new OIML R documents should be referenced to D11 and D31.  I will this with Paul Dixon.
SE 002	1			gen	<p>We believe that the technical development/requirements need to adapt to the current global political goals on traffic safety (Vision Zero) and the needs the enforcement authorities have in order to fulfil them.</p> <p>From the view of the enforcement authorities, the objective of speed measurements is primarily to refrain people from speeding. This is done by having visible enforcement authorities/measures with access to trusted and as accurate measurements as possible in clear traffic situations that are difficult to later question in court.</p> <p>The focus when developing the requirements should then be to have as strict error limits as technology allows for use in common speeding situations, such as straight roads, instead of adapting the error limits to include measurements in less common and sometimes, for both driver and police officer, dangerous situations.</p> <p>The proposal in the survey round 2 is that +/-3 km/h resp. +/-3 % is, as we understand, state of the art if the instrument has to perform in for example situations like curved trajectories. The main point in our comment is to question if that should limit the setting of a stricter requirement. The error limits in the current draft is more or less the same as in the 1990-version. We would like to think that the technical development now allows for stricter limits when used in the most common situations and thus more adapted to the needs of the society.</p>	Consider to differentiate the error limits to different traffic situations by putting stricter error limits for well-defined traffic situations, for example +/-1 km/h, and if necessary the proposed requirements in remaining situations.	NO  Note that under clause 6.5 there is already a linearity error limit of +/-1 km/h, which holds when all influence factors are minimized. This is a more general formulation than the proposed one, because "traffic situation" is one kind of influence factor.  This proposal to include a further error limit for "well-defined traffic situations" would only have an impact if also the deduction applied in judicial procedures would be different for "well-defined traffic situations" and "remaining situations". I'm not convinced that many countries would adapt such a differentiation.  We could have vote on this.

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					Below (after the table) is enclosed some background information from the Swedish authorities responsible for traffic safety and enforcement with the aim to put the role of speed measurements into some context.		
<b>DE 003</b>	1	02	1	ed	Remove comma after “satisfy”	Remove comma after “satisfy”	NO, it is more easy to understand sentence with comma. English grammar is not strict about commas.
<b>DE 004</b>	1	03.01.10		ed	Add “the” before “traffic”	Add “the” before “traffic”	OK
<b>DE 005</b>	1	03.01.11	Note	te	Make the existing note “Note 1” and add a second, clarifying note	Make the existing note “Note 1” and add a second Note: “Note 2: The trigger line is not necessarily in the same position for every measurement”	YES, we agree, this is also important for moving point speed measurements.
<b>UK 006</b>	1	03.01.		ed	The terminology in 3.1.2 could be amended to reflect technological advancement. Data can be stored online in the cloud, digital media or on mobile devices, not just on a computer.  Evidence file  Computer file containing all relevant data related to a speed measurement	Propose changing “Computer” to “Electronic” or “Electronic storage”.	OK
<b>DE 007</b>	1	03.01.3	Title	ed	Harmonize font size for the bold headlines with the other headlines	Change font size to 11pt	OK
<b>DE 008</b>	1	03.01.4	Title	ed	Harmonize font size for the bold headlines with the other headlines	Change font size to 11pt	OK
<b>FR 009</b>	1	03.01.5		te	What is the goal of the test mode? It is indicated that “The enforcement mode is the preferred mode for metrological control”. Is it possible to test the speed meters in the test mode?	Clarify.	EXPLAINED

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							You can find test modes typically with new generatoion FMCW Doppler RADARs. In test mode, speed meter switch off checking position and tracking of target, so you can use CW generators to check speed measurement. It is a work around to perform verification with common CW tools which are inexpensive to FMCW tools.
<b>DE 010</b>	1	03.01.5	Title	ed	Harmonize font size for the bold headlines with the other headlines	Change font size to 11pt	OK
<b>DE 011</b>	1	03.02.1		ed	Add clarifying sub-clause	Change beginning of sentence to “Speed (relative to the road surface) of ...”	OK
<b>UK 012</b>	1	03.02.3	Note	ed	The note appears to be incomplete	Proposal  “...measurements from a static point.	OK
<b>DE 013</b>	1	03.02.3	Note	ed	Add “a” after “from”	Add “a” after “from”	OK
<b>DE 014</b>	1	03.02.7	Note 2	ed	Remove “by hand”	Remove “by hand”	OK, I agree it is not important ... with some speed meters you need a forklift to do this ...
<b>DE 015</b>	1	03.02.7	Note 2	ed	Replace “tripod (or similar temporary stand)” by “tripod or similar temporary stand (to guide the hand of the operator)”	Replace “tripod (or similar temporary stand)” by “tripod or similar temporary stand (to guide the hand of the operator)”	OK

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CN 016	1	03.03.10	2	te	Add “The closest driving” before “Distance between entry and exit detection fields of fixed-distance speed meters” to make it unique	Add “The closest driving” before “Distance between entry and exit detection fields of fixed-distance speed meters” to make it unique	OK, we agree with this formulation, because this distance prevents that measurement in not favour of driver.
BE 017	1	03.03.11			In the note the reference to the hash algorithm MD5, could be a wrong signal for the manufacturer because the MD5 algorithm is too weak to protect data. The minimum should be SHA-2.	“Typical hash algorithms are SHA-2 or stronger”	MD5 >> 128 bit hash, SHA-2 256 bit hash  OK, accepted
NL 018	1	03.03.2		te	Range finding is also possible using (frequency) modulation. Pulse is another modulation.	Speed meter emitting modulated radiation and determining the range from the radiation reflected by objects	OK, partially excepted ...
FR 019	1	03.03.2	Note	ge	Clarify the different types of laser scanners	Replace the sentence in the note by “2D and 3D laser scanners and hand-held LIDAR speed meters are examples belonging to this category”.	NO, Laser scanner is more general, it covers also 2D and 3D laser scanners
NL 020	1	03.03.3		te	Detection fields is not clear, is it the distance between the lasers or the beam width. Or is it the loop itself or the distance between the loops.	Speed meter incorporating three or more detection points at fixed distances and detecting the transit time of the vehicles between the detection points	OK
CN 021	1	03.03.3	Note	ed	Add “or light” between Laser barriers	Add “or light” between Laser barriers	OK, we cover with this devices based on the visible light
NL 022	1	03.03.4		te	5 m is too close to each other for an average	Fixed-distance speed meter with closest detection fields separated by more than 50 m	OK, accepted
CN 023	1	03.03.4	2	te	5m is too short for the section distance, and has no meanings to section control.	Change “5 m” to “1 km or longer”	NO  See NL022, there are section control with less than 1 km section distance, like 250 meters.
CN 024	1	03.03.6	1	ed	Add “Horizontal” before “Beam width” to make it clearer	Add “Horizontal” before “Beam width” to make it clearer	OK

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CN 025	1	03.04.11	after	ge	Add the term and definition of the “above-the-road speed meter”, which is mounted on the gantry or cross-bar directly above the lane of the road and is the most widely used in China.	Add the term and definition of the “above-the-road speed meter”, which is mounted on the gantry or cross-bar directly above the lane of the road and is the most widely used in China.	NO, see 3.4.10 Along the road speed meter (if cosine error is not compensated)
DE 026	1	03.04.5		ed	Add “the” before “closest”	Add “the” before “closest”	OK
DE 027	1	03.04.5		te	Do we need to specify whether to use the outer or the inner edge of the lane marking? Can make a difference of 30 cm.		OK  It is obvious which edge of the lane it is, but it is not obvious which edge of the lane marking it is.
FR 028	1	03.04.6	Fig1	ed	The 3.4.2 states to see the figure 1 for the reference point. The reference point is not indicated on figure 1.	Indicate on figure 1 where the reference point is.	OK
CN 029	1	03.04.8	1	ed	Add “Horizontal” before “Angle measurement” to make it clearer	Add “Horizontal” before “Angle measurement” to make it clearer	NO, not necessary  Horizontal is in the definition.
CN 030	1	03.04.9	Note	te	$v_m = v \cdot \cos(\alpha)$ is right for the across-the-road speed meter, but is wrong for the above-the-road speed meter, which should be $v_m = v \cdot \cos(\beta)$ and $\beta$ is the vertical angle.	The calculation formulas are respectively given for the across-the-road speed meter and the above-the-road one.	No, we don't agree with this change. It's the same formula for both cases. As indicated in the note of clause 3.4.7 the measurement angle has in general a horizontal and a vertical component. I added this comment to the note of clause 3.4.9.
DE 031	1	03.04.9	Note	ed	Typeset “v” in italics (2x)	Typeset “v” in italics (2x)	OK
UK 032	1	03.05.10	Note	ed	Clause 5.18 containing the supplements is not in Parts 1 or 2	Proposal	OK, cross reference field was not updated

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						Add the supplements and reference the right clause in the note	
<b>DE 033</b>	1	03.05.10	Note	ed	Where are the supplements to clause 6.17.1?		OK, cross reference field was not updated
<b>BE 034</b>	1	03.05.2			Keep the OIML V1 definition and replace “Indicated quantity value” by “indication” as defined in OIML V1 “indication minus a reference quantity value”  If you find that is not enough clear add a note as “indication means indicated quantity value”	“indication minus a reference quantity value”	Is comment probably related to the 3.5.1?  OK
<b>DE 035</b>	1	03.05.2		te	In the first line, should “measurement error” not be “error of indication”?	Maybe replace “measurement error” by “error of indication”	OK, indication is based on the measurement ... we could change this ...
<b>DE 036</b>	1	03.05.7	Last line	ed	Add “the” before “same”	Add “the” before “same”	OK
<b>NL 037</b>	1	03.06		te	As GNSS is not traceable it cannot be used for enforcement (legal issue)	Delete line “GNSS ...”	OK, we left by accident GNSS abbreviation, we removed also other not used abbreviations
<b>FR 038</b>	1	04		te	The sentence “unless a country’s legal units are different” seems unclear and does not comply with OIML B6-2. The clause 4.8 of OIML B6-2 indicates: The units of measurement in which the given instrument’s measurement results will be presented, as well as their symbols, shall conform with the decisions of the General Conference of Weights and Measures (CGPM), OIML D 2:2007 Legal units of measurement, and, if necessary, the detailed specifications of the appropriate part of ISO/IEC 80000.	Add a note to avoid misunderstandings: “The units of measurement in which the given instrument’s measurement results will be presented, as well as their symbols, shall conform with the decisions of the General Conference of Weights and Measures (CGPM), OIML D 2:2007 Legal units of measurement, and, if necessary, the detailed specifications of the appropriate part of ISO/IEC 80000”	OK

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CN 039	2	04.02	1	ge	Add “It is recommended that the metrological field tests should be completed in real traffic conditions.” mentioned in previous R 91-e90 before “It might be necessary to perform measurements at several test sites to include all of the following aspects:”	Add “It is recommended that the metrological field tests should be completed in real traffic conditions.” mentioned in previous R 91-e90 before “It might be necessary to perform measurements at several test sites to include all of the following aspects:”	
DE 040	2	04.02	Last paragraph	ed	Edit	Add space before “The roads at all test sites” and remove comma after “test sites”	OK
CN 041	2	04.03	1	te	Why is required to “above 1.8 s”? It is difficult to operate in actual metrological field test.	Please make it clear to how to operate or delete it.	NO, It's about average temporal distance between vehicles, if there are few cases, in which the distance between vehicles are below this limit it's not a problem. We find this condition reasonable because testing should not be done during congestion-like traffic.
NL 042	2	04.04	1 <sup>st</sup> alinea	te	Number of tests for manual shall be at least 100, 50 is too low for statistical confidence		NO, We think 50 manual measurements can be enough. Larger numbers of measurements might be necessary when several installation conditions or specific scenarios are tested (as stated in 2 <sup>nd</sup> alinea)

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CN 043	2	04.05	2	te	The uncertainties of the reference speed meters for single measurements and a sequence of measurements should be the same, and shall not exceed 0.3 km/h or %. It is mentioned in clause 6.4 of R 91-1 that the MPE for stationary measurements of speed meters is required to be $\pm 3$ km/h or %, which means the MPE for reference speed meter shall be $\pm 1$ km/h or %. In order to judge whether the speed meter under test is qualified or not, therefore, it is suggested that the uncertainties of the reference speed meter shall not exceed 0.3 km/h or %.	The expanded measurement uncertainty ( $k = 2$ ) of the reference speed meter for both single measurements and a sequence of measurements is required to be less than 0.3 km/h or %.	NO, For many speed meters and reference speed meters the dominating uncertainty is of statistical nature. The uncertainty for single measurements is higher than for a mean of a sequence of measurements. We think that the limits should be adapted to this and therefore think that our proposal is appropriate. Many mobile reference speed meters would not fulfil the limit of 0.3 km/h or % for single measurements.
NL 044	2	04.05	2 <sup>nd</sup> alinea	te	This requirement may be too severe. Expand with possibility to have factor 3 (1%) and compensate the MPE (2,4%) for the extra uncertainty. See 5.3.6 of OIML G19	Add: “If this uncertainty cannot be met, an uncertainty of 1 km/h up to 100 km/h and 1% above 100 km/h can be used where the added uncertainty is compensated for in the maximum permissible error.	OK, we included this proposal, however without specifying the fixed value of 1 km/h or %. We think the proposed method can also be applied with values of 0.8 or 1.1 for example.
BE 045	2	04.06			Why is there no reference to the clause 6.15.1 which defined the MPE for moving measurement? It is important for the type approval process if the speed meter could be used in both situations stationary or/and moving	“The MPE defined in clauses 6.4 and 6.15.1 of R 91-1...”	NO, this test is only for stationary speed meters and for moving speed meters in stationary mode (see beginning of clause 4.1). Therefore only MPE in clause 6.4 of R91-1 is relevant. Tests for moving measurements are described in clause 7.7.
BE 046	2	04.07			Idem 4.6		See comment BE 045

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CN 047	2	04.07	1	te	Change the recommended series of intervals to [20 km/h, 100 km/h] and [100 km/h, 180 km/h], and change the recommended value “z = 5”to “z = 3”.	Change the recommended series of intervals to [20 km/h, 100 km/h] and [100 km/h, 180 km/h], and change the recommended value “z = 5”to “z = 3”.	NO, we propose intervals of width 50 km/h (we continued the series, to make it more clear). A z value of 3 is too low, in our opinion (not enough statistical confidence).
NL 048	2	04.09	1 <sup>st</sup> alinea	ed	Superfluous text	Delete “Speed values outside the legal interval”	??? No surplus text
DE 049	2	04.09	1st paragraph	ed	Remove words	Remove fragment of sentence: “Speed values outside the legal interval”	??? No surplus text
NL 050	2	04.09	2 <sup>nd</sup> alinea	Te	“a.” should be mandatory, “b.” can be used as supplement and to generate an acceptable number of measurements (50)	The metrological performance of the DUT outside the legal speed interval up to the maximum speed range shall be tested by:  a. performing field measurements in a protected environment (for example, on a race circuit).  b. (optional) performing metrological laboratory tests using a validated complete traffic simulator in order to obtain 50 measurements.	NO,  Rejected, because some situations are just too dangerous to perform them even at closed circuit with higher speeds.
DE 051	2	04.09	Headline	ed	Correct typo	Add “e” to give “measurements”	OK
NL 052	1	05		ed	The wording suggest it is voluntary	Speed meters are categorised according to:	OK
NL 053	1	05	01.b.	ed	According to the scope it does not need to be a police vehicle	Delete “police”	OK
CN 054	1	05	3-a	ed	For fixed-distance, add “or light” between Laser barriers	For fixed-distance, add “or light” between Laser barriers	OK

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NL 055	2	05.01	1 <sup>st</sup> alinea	te	Moving speed meters shall also be tested simulating both ego speed and moving speed at the same time	Add: “and combined with simulation test in moving mode	OK, but we think that this sentence fits better in clause 7.7.3, which is specifically about moving measurements (we included your proposal there).
NL 056	2	05.02		ed	More characteristics are described in other clauses (uncertainty 5.3, validation 4.9 ...)	Move these characteristics to this clause	OK, we included a new paragraph.
DE 057	2	05.02	1st paragraph	ed	Edits	Remove comma after “device”, change “independent from” to “independent of”	OK
DE 058	2	05.02	2nd paragraph	ed	Edit	Replace “, which” by “that” (without comma)	OK
DE 059	2	05.02	3rd paragraph	ed	Edit	Replace “, which” by “that” (without comma) Remove comma after “partial traffic simulator”	OK
CN 060	2	05.05	after	ge	Add a new clause to describe the angle test	Add a new clause to describe the angle test	OK, added a new clause 5.6 in analogy to clause 5.5.
NL 061	2	06		ge	Reference to D 11 should be replaced by actual descriptions	Replace D 11 references by actual descriptions	No, see NL001
DE 062	2	06	1st paragraph	ed	Add word	Add “the” before “manufacturer.”	OK
DE 063	2	06	2nd paragraph	ed	Add word	Add “the” before “manufacturer’s”	OK
DE 064	2	06	Last bullet	ed	Add word	Add “the before “final”	OK
DE 065	2	06.01	MPE	ed	In the definition of “MPE”, change/add two words	Change “are respected” to “is respected” Add “the” before “influence factor”	OK

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NL 066	2 RF	06.01	Table	te	Include Iv after dry heat and cold to indicate low voltage of internal battery is applied during temperature tests	Replace in line 1 and 3 of Table 1 I by Iv  Add in the Note below the table: Iv Influence factor combined with Low voltage of internal battery (29)	NO, we don't see a technical reason to perform those test at low voltage internal battery state ...
UK 067	2	06.01	Table 1, 7)	ed	Water is listed however there is no test for water	Proposal  Remove the line no 7) Water	NO, this is to maintain cross reference to OIML D 11
NL 068	2	06.02		ed	Already defined in 5.1	Describe either in 5.1 or in 6.2 only	NO, 5.1 are for laboratory metrological tests and 6.2 are reference conditions for influence factor and disturbance tests.  We would like to have them separated.
DE 069	1	06.02	Last line	ed	Add "the" before the first occurrence of "speed value"	Add "the" before the first occurrence of "speed value"	Accepted (last sentence in clause 6.2)
FR 070	1	06.02/6.3		te	It is indicated "speed values shall be indicated as integer numbers" and "The indicated integer speed value shall be the relevant speed value used in all metrological controls". That means only integer numbers are used. In these conditions, could you clarify why speed values with higher resolution are possible for the test interface, test mode? It seems no relevant with the part 2, 4.6 b) where mathematical operation "rounding toward zero (truncating) are authorized. It seems values with higher digit can be used for metrological controls.	Clarify.	CLARIFICATION  We have already discussed this during the survey.  It is decision to enforce speed with resolution of 1 km/h. It is not attend to give a speed meter to lose a driving licences, because you were speeding for 0,1 km/H.  Higher resolution at test interface gives you an inside option to observe performance of speed meter. It is necessary to check the linearity error limit.

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NL 071	2	06.03		te	Unnecessary to perform before and after each disturbance. One time at start of the examination and 1 time at the end of the examination is sufficient. During influence and disturbance compliance with MPE is checked anyway.	Delete 6.3	NO, this is the best possible way to check, if influence factors and disturbances has permanent effect on speed meter MPE and, to determine where the problem appears ...
DE 072	1	06.03	Note 1	ed	Change “metrological relevant” to “metrologically relevant”	Change “metrological relevant” to “metrologically relevant”	OK
FR 073	1	06.04		te	On the base of the survey 1, it has been decided to keep the same mpe for all verifications. But in the same time some comments propose to use a stricter MPE (equivalent to 1/3 of mpe in operating conditions) for laboratory examination. In OIML G19, 5.3.4 the third of the mpe is used for the uncertainty. We fear the survey has been misled and the risk to create “supplementary” requirements for test means and the difficulty to have test means that do not fulfill requiriments.	The change and consistency of mpe (for laboratory examination) have to be discussed.	We added "(optional)" to clause 5.4 of part 2.
NL 074	1	06.04		ed	Mentioning reference speed value is not necessary (included in definition of MPE)	Delete “of the reference speed value”	NO, it is more clear to state this  When giving a %-value it is good practise to clearly state what this % refers to.
NL 075	2	06.04	1st alinea	te	For disturbances only 100 km/h (speed value where MPE changes from absolute to relative)) should be sufficient.	During the presence of influence factors at least 5 speed values covering the specified speed range and including 100 km/h are simulated. It is recommended to repeatedly cycle over a preselected list of reference speed values.  During the presence of disturbances 100 km/h is simulated.	OK

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## Template for comments and secretariat observations

Date:2022-07-26

Document: TC7\_SC4\_P3\_N037

Project: TC 7/SC 4/p 3

MB/ NC <sup>1</sup>	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
						Alternatively, it is possible to carry out dynamic performance test as specified in clause 5.3.	
<b>FR 076</b>	1	06.05		te	The speed linearity test is mandatory (“shall”). In part 2, it is stated the test is done by simulation. It is a limitation for the approval. OIML recommendation state requirements to reach a goal but not limit the means to reach it. It is possible to approve with only metrological field tests. Metrological field tests are mandatory.	The speed linearity test shall be optional if only realised by simulation or be modified in part 1 (mpe are too restrictive to be carried out in the field) and in part 2 (conditions to realize it (not only by simulation), uncertainties...).	The speed linearity test is a simulation test. We added "(optional)" to clause 5.4 of part 2.
<b>NL 077</b>	1	06.05		ed	Mentioning reference speed value is not necessary (included in definition of MPE)	Delete “of the reference speed value”	NO, it is more clear to state this
<b>NL 078</b>	2	06.05		te	Because checking facilities shall include simulation, the accuracy of the internal simulation (frequency source) needs to be examined during tests	The test procedures for dry heat (operating), cold (operating) and voltage variations shall include the testing of the corresponding checking facilities. The test report shall state how the checking facilities were tested	OK, changed from “might” to “shall”
<b>NL 079</b>	2	06.06		te	the occurrence of a fault is never acceptable	The (difference in) time keeping of the simulation and the EUT shall be taken into account (corrected) if necessary	OK, but we propose a different sentence.
<b>BE 080</b>	1	06.06	3rd paragraph		We advise to use the same terminology as that given by the definitions and replace “outside the region” by “outside the detection field” because the vehicle identification is carried out in the detection field.	“outside the detection field”	OK
<b>CN 081</b>	1	06.07	1	ed	“5.6” seems to be “6.6” here.	“5.6” seems to be “6.6” here, please check it.	OK, field in WORD file was not updated.
<b>NL 082</b>	1	06.07	2nd bullet	ed	‘specified in national regulations’ is not needed	Delete “or as specified in national regulations”	OK, we agree, you can always specify this at national regulation
<b>NL 083</b>		06.08	2nd alinea	ed	compensation of the cosine error can be based on configured vertical angle and measured horizontal angle	... compensation of the cosine error is based on configured parameters and/or on measured values of the horizontal and/or vertical measurement angles.	OK, makes requirement more universal

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Date:2022-07-26

Document: TC7\_SC4\_P3\_N037

Project: TC 7/SC 4/p 3

MB/ NC <sup>1</sup>	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
DE 084	1	06.08	2nd paragraph	ed	Remove comma after “manual”	Remove comma after “manual”	NO, see comments about commas above.
CN 085	1	06.08	after	ge	Add the “Requirements specific to above-the-road speed meters”	Add the “Requirements specific to above-the-road speed meters”	NO, see comment CN025
CN 086	1	06.09	1	ed	“5.4” seems to be “6.4” here.	“5.4” seems to be “6.4” here, please check it.	OK, Word was not updating cross reference fields
CN 087	1	06.10	1	ge	Replace “beam width” by “horizontal and vertical beam widths”	Replace “beam width” by “horizontal and vertical beam widths”	OK
CN 088	1	06.10	4	ed	Replace “beam width” by “beam widths”	Replace “beam width” by “beam widths”	OK
CN 089	1	06.10	5	te	“–30 dB” is too exacting requirement for radar antenna, and it is suggested to be “–15dB”.	“–30 dB” is too exacting requirement for radar antenna, and it is suggested to be “–15dB”.	NO
DE 090	1	06.10	Last paragraph	te	Add “(side lobe)” after “microwave beam”... if that is what is meant here	Maybe add “(side lobe)” after “microwave beam”	OK, added because it is more explanatory
FR 091	1	06.11		te	The characteristic “the beam width shall be within $\pm$ 10% from rated values by manufacturer” is not relevant and not applicable for “laser scanners” (more than 1 beam or one beam and one mirror). For these instruments, it shall be necessary to enlarge the requirement.	Requirements for the beam width of instruments of “laser scanners” (with more than one beam or one beam and one mirror) to discuss.	NO
NL 092	1	06.11		te	To cover also for other modulations ( for example FSK or FM) the description should be more general	The manufacturer shall specify the characteristics of the modulation in order to check stability. For example pulse time intervals, modulation or sweep frequencies.	OK, added
DE 093	1	06.11	Last paragraph	ed	Change “rated values by” by “the rated values specified by the”	Change “rated values by” by “the rated values specified by the”	OK
NL 094	1	06.12		ed	In line with comment on 3.3.3 use “point”	Replace “fields” with “points”	OK

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Project: TC 7/SC 4/p 3

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							YES, We also changed clause 3.3.9 accordingly and added a new clause 3.3.10.
<b>CN 095</b>	1	06.12	1	ge	Add the requirement to time synchronization and measurement.	Add the requirement to time synchronization and measurement.	NO Time synchronisation is important for average speed meters (clause 6.12). Loop detectors and similar short-distance speed meters use the same time source for both detection fields, so there is nothing to synchronize.
<b>DE 096</b>	1	06.12	1st paragraph	ed	Remove comma after “method”	Remove comma after “method”	NO, commas are going to stay
<b>DE 097</b>	1	06.12	1st paragraph	ed	In the second sentence, replace “The uncertainty of” by “The characterization of the uncertainty of”	In the second sentence, replace “The uncertainty of” by “The characterization of the uncertainty of”	OK
<b>BE 098</b>	1	06.13			What is the metrological/scientific reason to restrict the detection field to 0.5% of the section distance, and for example not to 1%?		EXPLANATION  MPE requirement is 3%, we divide MPE sources to travelled time and distance. We decided to give 1% to distance and because you have two detection fields, each get 0,5% ...
<b>BE 099</b>	1	06.13			What is the maximum permissible time difference when checking the time synchronisation, before resulting in a control failure ?		EXPLANATION  In practice in the field you are not dealing with time, you are dealing with average speed in general, which is function of traveling time and travelled distance. You are dealing with time only at laboratory conditions

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Document: TC7\_SC4\_P3\_N037

Project: TC 7/SC 4/p 3

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AT 100	1	06.13		te	<p>The size of the detection field should be in relation to the minimum distance (determined by the manufacturer) and not to the whole distance. E.g. for a distance of 10000 m it would be 50 m.</p> <p>If the time stamps are taken by GNSS then it is not necessary to check it by two independent means.</p>	<p>The size of detection field shall not exceed 0.5 % of the minimum of the section distance.</p> <p>If time synchronisation between detection fields is not taken by GNSS it shall be achieved and checked by two independent means.</p>	<p>Partially accepted</p> <p>OK, we agree with proposal detection field shall not exceed 0.5 % of the minimum of the section distance.</p> <p>Part II is reject.</p>
AT 101	1	06.13		ed	In the last sentence there is a typo in the reference to 5.12.	... speed meters (clause 6.12) shall ...	OK, Word was not updating fields
DE 102	1	06.13	4th paragraph	ed	Replace second sentence by “Speed measurements shall be inhibited immediately when a check fails.”	Replace second sentence by “Speed measurements shall be inhibited immediately when a check fails.”	OK
CN 103	1	06.13	5	ed	“5.12” seems to be “6.12” here.	“5.12” seems to be “6.12” here, please check it.	OK, Word was not updating fields
FR 104	1	06.14		te	There is no real requirement for image-based speed meters. Others technologies have more requirements. It has been deciding to leave this open for further versions of OIML R91 because currently there is not enough specific requirements for this kind of speed meters. If this technology is kept, the requirements have to be completed. Otherwise, there is a risk to approve instruments without real requirements.	Complete the requirements for image-based speed meters or delete this technology.	<p>We don't see any problem in leaving this clause. It contains additional requirements. An image-based speed meter has also to fulfil requirements from clauses 6.4, 6.6, 6.8 and so on.</p> <p>This is quite a new field and if necessary, we could add requirements when we are going to do amendments.</p>
DE 105	1	06.14	1st paragraph	ed	Add “The” as first word	Add “The” as first word	OK

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BE 106	1	06.15.01			We understand that this proposal reflects the result of the last questionnaire, but we think it's easier to explain that with dynamic effect we shall double MPE from stationary during the moving. This option didn't exist in the questionnaire. Why “+/- 7 km/h,+/- 7 %” and for example not “+/- 6 km/h ,+/- 6 %”?		NO, you can always put different national requirements.  We are looking for broader consensus between P members - survey.									
NL 107	1	06.15.01		ed	Mentioning reference speed value is not necessary (included in definition of MPE)	Delete “of the reference speed value”	NO, same as above									
NL 108	1	06.15.01		te	These MPE's are not sufficient for enforcement in The Netherlands. May be a classification is possible depending on national regulations. Class A: +3 / -5 km/h up to 100 km/h and +3 / -5% above 100 km/h. Class B as is described now	Class A:  a. +3 / -5 km/h at speeds up to and including 100 km/h, and  b. +3/-5 % at speeds above 100 km/h  Class B:  a. ±7 km/h at speeds up to and including 100 km/h, and  b. ±7 % at speeds above 100 km/h	NO, you can always put different national requirements.  We are looking for broader consensus between P members - survey.									
NL 109	1	06.15.01	a.  b.	ed	A table would make it more clear	<table><tr><td>Class</td><td>≤ 100 km/h</td><td>&gt; 100 km/h</td></tr><tr><td>A</td><td>+3/-5 km/h</td><td>+3/-5 %</td></tr><tr><td>B</td><td>±7 km/h</td><td>±7 %</td></tr></table>	Class	≤ 100 km/h	> 100 km/h	A	+3/-5 km/h	+3/-5 %	B	±7 km/h	±7 %	NO, you can always put different national requirements.  We are looking for broader consensus between P members - survey.
Class	≤ 100 km/h	> 100 km/h														
A	+3/-5 km/h	+3/-5 %														
B	±7 km/h	±7 %														
BE 110	1	06.15.02	1st paragraph		Add the reference to the clause for stationary speed meter to be more complete in the end of the paragraph.	“...for stationary speed meters (clause 6.4).”	OK									

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NL 111	1	06.15.03		te	These MPE's are not sufficient for enforcement in The Netherlands. May be a classification is possible depending on national regulations. Class A: +0 / -1 km/h up to 100 km/h and +0 / -1% above 100 km/h. Class B as is described now	Class A:  a. +0 / -1 km/h at speeds up to and including 100 km/h, and  b. +0/-1 % at speeds above 100 km/h  Class B:  a. ±1 km/h at speeds up to and including 100 km/h, and  b. ±1 % at speeds above 100 km/h	NO, you can always put different national requirements.  We are looking for broader consensus between P members - survey.
AT 112	1	06.15.03		te	For the MPEs it is not defined if they are valid for built-in-car or under laboratory conditions. For built-in they seem to be too tight.	For the ego speed meter before built in a car, the following MPE shall apply within the rated operating conditions:  a. ±1 km/h at ego speeds up to and including 100 km/h, and  b. ±1 % of reference ego speed at ego speeds above 100 km/h.  For the ego speed meter built in a car, the following MPE shall apply within the rated operating conditions:  a. ±3 km/h at ego speeds up to and including 100 km/h, and  b. ±3 % of reference ego speed at ego speeds above 100 km/h.	NO
NL 113	1	06.15.03	1st Alinea 1st line	te	ego speed shall have resolution of 1 km/h (another reason to have asymmetrical MPE). 0.1 km/h suggests an accuracy that is not possible. See 6.2	The ego speed shall be displayed and stored in the evidence file with a resolution of 1 km/h	NO
NL 114	1	06.15.03	1st Alinea	te	resolution of ego speed for test interface: 0.1 km/h is sufficient	The ego speed with a resolution of at least 0.1 km/h shall be part ...	NO

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Date:2022-07-26

Document: TC7\_SC4\_P3\_N037

Project: TC 7/SC 4/p 3

MB/ NC <sup>1</sup>	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat									
			2nd line													
UK 115	1	06.15.03	2nd paragraph	ed	The second paragraph is in bold face.	Proposal  Remove formatting “bold” from the 2nd paragraph.	Sorry we cannot see 2 <sup>nd</sup> paragraph in bold face. Nevertheless we reformatted chapter.									
DE 116	1	06.15.03	2nd paragraph	ed	This paragraph should not be in bold face.	Remove formatting “bold”	Sorry we cannot see 2 <sup>nd</sup> paragraph in bold face.  Nevertheless we reformatted chapter.									
DE 117	1	06.15.03	2nd paragraph	ed	Add “its” before “rated”	Add “its” before “rated”	OK									
NL 118	1	06.15.03	3rd aline	ed	Mentioning reference speed value is not necessary (included in definition of MPE)	Delete “of the reference speed value”	NO									
NL 119	1	06.15.03	5th aline	ed	Term “calibration factor” is not in line with VIM	Change “calibration factor” to “adjustment factor” 2 times	YES, it is not calibration, it is adjustment w [imp/km] ...  Thank you ...									
NL 120	1	06.15.03	a.  b.	ed	A table would make it more clear	<table><tr><td>Class</td><td>≤ 100 km/h</td><td>&gt; 100 km/h</td></tr><tr><td>A</td><td>+0/-1 km/h</td><td>+0/-1 %</td></tr><tr><td>B</td><td>±1 km/h</td><td>±1 %</td></tr></table>	Class	≤ 100 km/h	> 100 km/h	A	+0/-1 km/h	+0/-1 %	B	±1 km/h	±1 %	NO, we don’t want to introduce classes the speed meters.  Classes could bring confusion and more complaints.  You can do this with national legislation.
Class	≤ 100 km/h	> 100 km/h														
A	+0/-1 km/h	+0/-1 %														
B	±1 km/h	±1 %														
UK 121	1	06.15.03	Last paragraph	ed	“in regular intervals” is written	Proposal  Replace “in regular intervals” by “at regular intervals”	OK									

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DE 122	1	06.15.03	Last paragraph	ed	Replace “in regular intervals” by “at regular intervals”	Replace “in regular intervals” by “at regular intervals”	OK
DE 123	1	06.15.03	Last paragraph	ed	Remove hyphen in “user-interaction”	Remove hyphen in “user-interaction”	OK
CN 124	1	06.16	1	ed	“5.4” seems to be “6.4” here.	“5.4” seems to be “6.4” here, please check it.	OK, MS Word problem ...
NL 125	1	06.16	Below table 1	te	To prevent court cases about exceeding temperature range the speed meter shall take action	When the ambient temperature exceeds the specified range the speed meter shall either switch off or stop measuring.	This requirement is already present (in clause 7.5: Checking facilities)
DE 126	1	06.17	a.	ed	End clause with a semicolon	End clause with a semicolon	OK
DE 127	1	06.17	b.	ed	In the first and second “bullet” items, remove comma after “vehicle”	In the first and second “bullet” items, remove comma after “vehicle”	NO, we like commas ...
DE 128	1	06.17	d.	ed	Add full stop after “[2]”	Add full stop after “[2]”	OK
DE 129	1	06.17	First sentence	ed	We do not understand the language: What are operating conditions of requirements? Also, should “based on” mean “depending on”?	Please clarify sentence	OK, we change wording that manufacturer has to specify rated conditions for speed meter and take into account minimal requirements from 6.16  We added "in accordance with the"
NL 130	1	06.17	several	ed	According to D 11 the term test levels should be classification	Change “test levels” to “classification”	OK, changing
UK 131	1	06.17.01		ed	6.1.5 reference is wrong and in the Table 1 there is no test for water.	Proposal	OK

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Date:2022-07-26

Document: TC7\_SC4\_P3\_N037

Project: TC 7/SC 4/p 3

MB/ NC <sup>1</sup>	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
						Mandatory tests are for temperature, humidity and water, as listed in Table 1 in clause 6.1.5.	
AT 132	1	06.17.01		ed	The reference to 6.1.5 is wrong and in the table 1 there is no test for water.	... as listed in Table 1 in clause 6.16.	OK
FR 133	1	06.17.01	b), 2nd bullet	te	There is an unnecessary “and”	Remove the “and”	OK, we removed comma
DE 134	1	06.17.01	c.	ed	Remove “the” before “moderate”	Remove “the” before “moderate”	OK
DE 135	1	06.17.01	Last paragraph	ed	Replace the first “and” by a comma	Replace the first “and” by a comma	OK, we removed comma
DE 136	1	06.17.01	Second-to-last paragraph	ed	Replace “clause 6.1.5” by “clause 6.16”	Replace “clause 6.1.5” by “clause 6.16”	OK
FR 137	1	06.17.03		te	<p>Levels H1 and H2 are not realistic and relevant for speed meters. According to D11, H1 is for “instruments or parts of instruments typically used in temperature-controlled enclosed (weather protected) locations” as “living rooms, continuously staffed offices, certain workshops, and other rooms for special applications”. H1 is not relevant for speed meters.</p> <p>According to D11, H2 is for “instruments or parts of instruments typically used in enclosed (weather protected) locations where the local climate is not controlled” as “buildings, garages, cellars, certain workshops, factories, industrial plants, ordinary storage rooms...” is relevant only for parts of moving speed meters inside of the vehicle.</p>	<p>Delete level H1 and specify level H2 shall be limited to parts of moving speed meters inside of the vehicle.</p> <p>Add that if necessary, the speed meter can be tested in the cabinet.</p>	<p>No to delete H1</p> <p>Yes to cabinet. For example SensysGatso Chely has proprietary cabinet which provides H1 conditions.</p> <p>Added:</p> <p>Speed meter can be tested inside cabinet, the cabinet should be identified as a part of speed meter.</p>

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NL 138	1	06.17.03	a	te	When powered by stand alone battery and built into a vehicle include pulses a and b of ISO 6737	Add "If built in a vehicle electrical transient conduction via lines other than supply lines have to be applied,"	Rejected  We don't understand the purpose of this comment.  Speed meter can be built in the vehicle and connected to the vehicle battery or another standalone battery.  There is also a chance that speed meter is built into the vehicles [as camouflage] but connected to the mains. In this case requirements for E2 are applied
FR 139	1	06.18.01		te	The requirements for ego speed seems too strict. Is it really possible to test it (with a standard that fulfils requirements) ?	Requirements for ego speed to discuss.	No, requirements stay the same.  Based on the survey outcome.  Yes, it is possible. Faults are usually detected using a simulator during influence factor testing.
NL 140	1	06.18.01		te	The fault limit is equal to 1 km/h because all influence factors are minimized (6.5)	Change "1.5 km/h" to "1 km/h"	No, requirements stay the same.  Based on the survey outcome.  We don't see the necessity for the error during speed linearity test to be equal to the fault limit.

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NL 141	1	06.18.01	2nd alinea	te	Due to nature of EM disturbances (detection of disturbance at PN junctions) fault limit is absolute part of MPE	Delete “at speeds up to and including 100 km/h, and” (2x) and  lines starting with b.	No, requirements stay the same.  Based on the survey outcome.  There is not a single cause for faults. We think it's more consistent to leave as is.
DE 142	1	06.18.02	1st bullet	te	We are not sure what is meant. Is the alternative phrasing suggested here correct?  Second question: Does this bullet point refer to use during actual enforcement or should it apply only during testing?	Maybe replace bullet point by this:  “faults arising due to the simultaneous presence of more than one cause, all of which are mutually independent”	OK  Accepted proposal ...
DE 143	1	06.18.02	1st paragraph	te	All faults or just significant faults?		Normal faults, not significant faults.
DE 144	1	06.18.04	1st paragraph	ed	Remove comma after “way”	Remove comma after “way”	OK
DE 145	1	07.01.1		te	Is the term “high level” (2x) specific enough here?		OK, we changed to “the highest” level
DE 146	1	07.01.1	1st paragraph	ed	Replace “measured speed” by “the speed measurement”	Replace “measured speed” by “the speed measurement”	OK
DE 147	1	07.01.5	1st paragraph	ed	Add a comma after the second “speed measurement”	Add a comma after the second “speed measurement”	NO, there is need to have comma before “and” ...
NL 148	2	07.02		ed	2 items in 1 line	Move “scanning range to e.	OK
NL 149	2	07.02		te	Add modulation (see 3.3.2 comment)	Add f. modulation	OK

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## Template for comments and secretariat observations

Date:2022-07-26

Document: TC7\_SC4\_P3\_N037

Project: TC 7/SC 4/p 3

MB/ NC <sup>1</sup>	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
DE 150	1	07.02	1st paragraph	ed	Remove the words “one” (2x).  Add a comma after “easy”	Remove the words “one” (2x).  Add a comma after “easy”	OK,  No extra comma ...
DE 151	2	07.02	Item a.	ed	Two changes	Add “that” as first word  Replace “doesn’t” by “does not”	OK
DE 152	1	07.02.1		ed	Change phrasing at end of last sentence	Change end of paragraph to  “... is cleared explicitly by an action of the operator.”	OK
DE 153	1	07.02.2	Title	ed	Add “an” before automatic”	Add “an” before automatic”	OK
NL 154	1	07.03		te	Also show the calculated speed from measured and ego speed	n. calculated speed from measured and ego speed (only for moving measurements)	NO, already covered by point l.  Speed of the measured vehicle is already listed as point d. (for both stationary and moving speed meters). I slightly changed the sentence under point d., such that it more clear also for moving speed meters.
DE 155	1	07.03	1st line	ed	Add “the” before “following”	Add “the” before “following”	OK
BE 156	1	07.03	i		Replace clause 5.5 by 6.6 which concerns the vehicle identification	“see 6.6”	OK, link is corrected ...
DE 157	1	07.03	Item i.	ed	Replace 5.5 by 6.6 (?)	Replace 5.5 by 6.6 (?)	OK, link is corrected ...
DE 158	1	07.03	Item j.	ed	Add “the” before “speed”	Add “the” before “speed”	OK

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DE 159	1	07.03	Item m.	ed	End item with a full stop	End item with a full stop	OK
NL 160	1	07.03	1.	te	ego speed shall have resolution of 1 km/h (another reason to have asymmetrical MPE). 0.1 km/h suggests an accuracy that is not possible.	Measured ego speed with a resolution of 1 km/h (only for moving measurements)	Rejected, on the bases of outcome of survey.
DE 161	1	07.04	4th paragraph	te	Guaranteeing the correctness of the time of measurement:  Should not ALL information be correct AND protected against tampering etc.?	Rephrase (?)	OK, rephrased ...
NL 162	1	07.05		te	Speed simulation should be part of the self -checking, covering input to display where possible.	Insert (4th alinea): It shall also check the circuits from input to display, for example by simulating a speed. The speed simulation or any other method to check the accuracy of the system shall have a maximum error of 1 %.	OK, I agree to add this alinea ...  We included an adapted version of the proposal. We gave a further example (simulation of a time interval) and didn't include the proposed maximum error of 1 %, because the limit is already given by the fault limit value (clause 6.18.1).
DE 163	1	07.05	6th paragraph	ed	Add “is” before “located”	Add “is” before “located”	OK
DE 164	2	07.06		ed	Add full stop at end	Add full stop at end	OK
NL 165	2	07.07.1		te	“The simple acceptance decision rule (also known as shared risk decision rule) shall be used to decide on conformity.” is applicable for all test procedures	Move this sentence to clause 2 or 3	OK, we are removing this sentence.  Copy+Paaste error.

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							Removing sentence 2 and 3 from paragraph 3.
<b>DE 166</b>	2	07.07.1	3rd paragraph	ed	The second sentence seems out of place here. The use of the shared risk decision rule was already suggested in general in clause 4.6. Furthermore, the only place it is ever mentioned again is here in 7.7.1 and not in any other of the testing provisions in Part 2.	Remove second sentence of this paragraph.	OK, we are removing this sentence.  Copy+Paaste error.  Removing sentence 2 and 3 from paragraph 3.
<b>CN 167</b>	2	07.07.1	all	ge	In my opinion, it is dangerous for the testers and other drivers to require that moving speed meters shall be tested on the road under real traffic conditions, and also it may be time-consuming.	It is suggested that the moving speed meters should be tested at the proving ground.	NO, it is possible to do this on the real road conditions. For example you set trigger speed to the lowest possible value.
<b>DE 168</b>	2	07.07.2	1st line	ed	To further reduce risk of confusion with the second ego speed meter mentioned in clause 7.7.1 just before the present clause, add a few words	Add “of the EUT” after “performance of the ego speed meter”	OK
<b>DE 169</b>	2	07.07.2	Headline	ed	Add “the” before “ego”	Add “the” before “ego”	OK
<b>NL 170</b>	2	07.07.3		te	Both ego speed and speed for the moving speed meter shall be simulated during influence factor and disturbance tests. Otherwise one cannot be certain of correct operation of the combination under these influences/disturbances.	Influence factor and disturbance tests should be performed simultaneously on the moving speed meter and on the ego speed meter using these simulators.	This is already stated in clause 7.7.3 of part 2.
<b>FR 171</b>	1	07.08.2		te	It is written that “test mode is optional except if required for metrological control” but in 3.1.4 it is written “The enforcement mode is the preferred mode for metrological control.” The use of test mode is not clear.	Clarify.	Clarification

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							<p>New technology approaches such as SCANNING LIDAR, TRACKING DOPPER and MOVING POINT speed measurements, requires sometimes to switch off certain checking mechanism to perform verification at laboratory conditions.</p> <p>Example:</p> <ul style="list-style-type: none"> <li>- FMCW Doppler radar for mobile point speed measurements</li> <li>- additional checking mechanisms: <ul style="list-style-type: none"> <li>a. GPS speed</li> <li>b. GPS position</li> <li>c. Accelerometer</li> <li>d. Quality of target speed</li> <li>e. Quality of EGO speed</li> </ul> </li> </ul> <p>So, if you want to do simulation inside laboratory, you need to switch off at least parameters from a to c to “trick” system to perform measurement. Otherwise you must simulate also movement of vehicle, where system is built in.</p> <p>This is easiest done in “verification” mode.</p>

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FR 172	1	07.08.2		te	The second sentence “The test mode shall only be used for metrological control if state-of-the art simulation in enforcement is not possible” is not linked to a requirement but to a test procedure. It has to be moved in part 2.	Move the sentence “The test mode shall only be used for metrological control if state-of-the art simulation in enforcement is not possible” in part 2.	Rejected, this is the requirement for speed meter.
NL 173	1	07.08.2		ed	The test mode cannot be optional, the whole document is about metrological control.	The test mode is required for metrological control. The test mode shall not be directly accessible to the user and shall be protected (e.g. by a password). The results of the speed measurements in enforcement mode and in test mode shall be identical. The manufacturer specifies all differences between enforcement mode and test mode.	Rejected  See explanation for FR 171
CN 174	1	07.08.2	1	ed	Replace “an test mode” by “a test mode”	Replace “an test mode” by “a test mode”	OK
DE 175	1	07.08.2	1st line	ed	Replace “an” by “a”	Replace “an” by “a”	OK
CN 176	1	07.09	2-e	ed	Replace “(at start-up)p)” by “(at start-up)”	Replace “(at start-up)p)” by “(at start-up)”	Cannot find mistake
BE 177	1	07.09	a.		Replace clause 5.2 by 6.2 which concerns the resolution		OK
DE 178	1	07.09	a.	ed	Replace 5.2 by 6.2	Replace 5.2 by 6.2	OK
UK 179	1	07.09	Bulletin e)	ed	Duplicate “p)” is at end of the statement on bulletin e)	Remove duplicate “p)” at the end of bulletin e)	OK
NL 180	1	07.09	e	te	Version and checksum should be displayed, not necessary to output from test interface	Delete e.	NO, we are going to leave this option to make possible to automatically get information's about speed meter via test interface

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DE 181	1	07.09	e.	ed	Remove duplicate “p)” at end of line	Remove duplicate “p)” at end of line	OK
DE 182	1	07.09	Itemized list	te	Add new items.  This will allow more automated checking of measurement results	Add a new first item “time stamp of the measurement”  Add a new item “lane information (if applicable)”	YES, good idea ...  Added proposal ...
FR 183	1	07.10		ed	The sentence “If it is not possible to simulate the sensor input signal of a variety of traffic situations using state-of-the-art simulation a testing input interface is required” is in the title for the part dealing with software.	Correct.	OK  We were not able to find this mistake.  Probably WORD mismatch.
DE 184	1	07.10		ed	Headline should be the last paragraph of the previous No. 7.9	Headline should be the last paragraph of the previous No. 7.9	OK  We were not able to find this mistake.  Probably WORD mismatch
AT 185	1	07.10		ed	Obviously, there is a mix of the last sentence of 7.9 and the headline of 7.10.	f. If is not possible to simulate the sensor input signal of a variety of traffic situations using state-of-the-art simulation a testing input interface is required  7.10 Software	OK  We were not able to find this mistake.  Probably WORD mismatch
CN 186	1	07.10	title	ed	The sentence is not fluent, and “Software” in the end seems to be redundant.	The sentence is not fluent, and “Software” in the end seems to be redundant.	OK  We were not able to find this mistake.  Probably WORD mismatch
NL 187	1	07.10	title	ed	Remaining text	Delete “If it is not possible ... is required”	OK

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							We were not able to find this mistake.  Probably WORD mismatch
<b>DE 188</b>	1	07.10.02	1st paragraph	ed	Clarify: Replace “the memory device” by “an external memory device.” (if that is what is meant here)	Replace “the memory device” by “an external memory device.”	OK
<b>DE 189</b>	1	07.10.02	Last paragraph	te	Displaying the parameter setting cannot be just an optional feature, but it is needed, in particular for surveillance	Replace last sentence by: “For the purpose of verification it must be possible to display or print the current parameter settings.”	OK
<b>DE 190</b>	1	07.11	Last paragraph	ed	End paragraph with a full stop	End paragraph with a full stop	OK
<b>DE 191</b>	1	07.12	3rd paragraph	te	Clarify the important role of the manual: When all instructions are followed, then it is guaranteed that the device will measure correctly.	Replace “It shall include” by  “The information in the manual must be chosen and structured such that following all instructions in the manual is sufficient to guarantee that the speed meter fulfils all requirements, in particular obeys the error limits and ensures correct identification of the measured vehicle. The manual shall include at least:”	OK
<b>DE 192</b>	1	07.12	Last paragraph	ed	Add “the” before “acceptable”	Add “the” before “acceptable”	OK
<b>DE 193</b>	1	07.13	2nd paragraph	ed	Correct typo and add word	Change “tempering” to “tampering”.  Add “the” before “protection”	OK  ... tempering is from metallurgy world ...
<b>DE 194</b>	1	07.13	3rd paragraph	ed	In item b. add “the” before “speed meter”	In item b. add “the” before “speed meter”	OK
<b>DE 195</b>	1	07.14		ed	Replace sentence to clarify	Replace with	OK

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						“On the speed meter there must be enough space to put verification marks in visible spots.”	
NL 196	2	08		ge	Reference to D 31 should be replaced by actual descriptions	Replace D 31 references by actual descriptions	NO, we are going to reference to D 31
DE 197	2	08	1st paragraph	ed	Replace “sample.” with “the EUT.”	Replace “sample.” with “the EUT.”	OK
CN 198	1	08	2	ed	“5.19” seems to be “6.19” here.	“5.19” seems to be “6.19” here, please check it.	OK
DE 199	1	08	d.	ed	End item d. with a full stop	End item d. with a full stop	OK
CN 200	1	08.01.1	1	ed	“6.10” seems to be “7.10” here.	“6.10” seems to be “7.10” here, please check it.	OK
DE 201	1	08.01.1	12th item	ed	Replace “shall be provided to the user” by “will be provided to the user;”	Replace “shall be provided to the user” by “will be provided to the user;”	OK
DE 202	1	08.01.1	Last item	ed	Move “are” from before “speed values” to behind those words	Move “are” from before “speed values” to behind those words	OK
DE 203	1	08.01.1	Last paragraph	te	We think that it is not the job of the conformity assessment body to judge the quality of instruments submitted for testing. That will be done by market forces. Therefore, we suggest a different wording.	Replace the phrase “study the quality of the instrument” by the word “test”	OK, it is more clear now.  We agree with you but propose a different sentence: Testing laboratory can request any additional more detailed documentation to be able to continue with testing of speed meter
DE 204	1	08.01.2	2nd paragraph	ed	Add word	Add “the” before “speed meter.”	OK, it exist already ...

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DE 205	1	08.01.2	5th paragraph	te	There is no reason to restrict disturbance tests to only one or two copies of the EUT.	Add word “or” to give: “..may be performed on one or more additional EUT.”	Rejected  No, one EUT should withstand all required tests. If one test fails and EUT is redesigned all tests should be repeated.
DE 206	1	08.01.2	6th paragraph	ed	Wording	Change “If a EUT...” to “If an EUT...”	OK
DE 207	1	08.01.2	Last paragraph	ed	Add comma after “Thereafter”	Add comma after “Thereafter”	OK
CN 208	1	08.01.3	2-a~I	ed	All the sub-clause numbers seems to be wrong.	All the sub-clause numbers seems to be wrong.	OK, Word did not update fields.
DE 209	1	08.01.3	Item g.	ed	Replace “measurement results” by “evidence files”	Replace “measurement results” by “evidence files”	NO, there are speed meters, which does not produce evidence files ...
FR 210	1	08.01.4		te	Metrological laboratory test by traffic simulation is mandatory in this proposal. It is a limitation for the approval. OIML recommendation state requirements to reach a goal but not limit the means to reach it. It is possible to approve with only metrological field tests. Metrological field tests are mandatory.	Merge a) and b) by “Metrological tests (field test (OIML R 91-2, 4) and if applicable laboratory test by traffic simulation (OIML R 91-2, 5))	Accept partially...
CN 211	1	08.02	2	ed	“clauses 5 and 6” seems to be “clauses 6 and 7”	“clauses 5 and 6” seems to be “clauses 6 and 7”	OK
DE 212	1	08.02	2nd paragraph	te	We think it is mandatory, and not just preferred, that the device complies with requirements at initial verification	Change “should” to “shall”	OK
DE 213	1	08.02.1	Item b.	ed	Replace “for” by “of”	Replace “for” by “of”	OK
CN 214	1	08.02.3	1-a~b	ed	“clauses 5.4” seems to be “clauses 6.4”, “clauses 6” seems to be “clauses 7”	“clauses 5.4” seems to be “clauses 6.4”, “clauses 6” seems to be “clauses 7”	OK

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<b>BE 215</b>	1	08.02.3	a.		Replace “clause 5” by clause “6”  Replace MPE given in clause Error....” by Replace MPE given in clauses 6.4 and 6.15.1 because the metrological requirements are defined in clause 6 and MPE in stationary by the clause 6.4 and in moving by the clause 6.15.1	Replace “clause 5” by clause “6”  Replace MPE given in clause Error” by Replace MPE given in clauses 6.4 and 6.15.1	OK
<b>DE 216</b>	1	08.02.3	Item a.	ed	Correct references	Replace “clause 5” with “clause 6”  Replace “clause 5.4” with clause “6.4” (or even better, with “clauses 6.4 and 6.15.1”)	OK
<b>DE 217</b>	1	08.02.3	Item d.	ed	Shorten text	Replace beginning of item d. by this:  “configuration of the speed meter as far as...”	OK
<b>CN 218</b>	1	08.02.4	1	ed	“6.14” seems to be “7.14”	“6.14” seems to be “7.14”	OK, Word did not update fields
<b>DE 219</b>	1	08.02.4	1st paragraph	ed	Replace “be according to” by “follow”	Replace “be according to” by “follow”	OK
<b>CN 220</b>	1	08.03	3	ed	“7.2” seems to be “8.2”	“7.2” seems to be “8.2”	OK, Word did not update fields
<b>CN 221</b>	1	08.03	4	ed	“6.14” seems to be “7.14”	“6.14” seems to be “7.14”	OK, Word did not update fields
<b>DE 222</b>	1	08.03	Last paragraph	ed	There may or may not be any additional national legislation. Therefore, replace “to the additional” by “to any additional”	Replace “to the additional” by “to any additional”	OK
<b>DE 223</b>	2	08.03.4	Items 13 and 17	te	In items 13 and 17, the same phrasing from clause 7.4 of Part 1 appears. We repeat our comment from above:  Guaranteeing the correctness of the time of measurement:	Perhaps rephrase items 13 and 17	OK, our mistake. Key point is a speed measurement and not time measurement.

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					Should not ALL information be correct AND protected against tampering etc.?		
<b>CN 224</b>	1	08.04	1	ed	“7.2” seems to be “8.2”, “7.3” seems to be “8.3”	“7.2” seems to be “8.2”, “7.3” seems to be “8.3”	OK, Word did not update fields
<b>FR 225</b>	2	4.2	a	te	It is written “The speed of the vehicles shall cover the interval from the minimum specified speed to the maximum legal speed on motorways”. There is no indication for speeds between the maximum legal speed on motorways and the maximum speed measured by the speedmeter. It is mandatory to realise test in the field with speeds between the maximum legal speed and the maximum speed measured by the speedmeter. These tests can be realized on circuits	Add : “For speed between the maximum legal speed on motorways and the maximum speed measured by the speedmeter, tests shall be realized on circuits”.	NO, we are talking here about “real” road conditions.  It is more than clear, when to use closed road or circuits.
<b>FR 226</b>	2	4.2		te	If the instrument is intended to be used on two-way roads (with approaching and departing vehicles) the instrument shall be testing with these conditions.	Complete the description of the tests to test all conditions (approaching and departing vehicles...).	OK, added road with departing and approaching traffic
<b>FR 227</b>	2	4.2		te	A curve radius larger than the specified minimum curve radius of the EUT is not sufficient, it is mandatory to test until the specified minimum curve radius. The test with a curve radius at least equal than the specified minimum curve radius is not limited to across-the-road speed meters.	Change to “The roads at all test sites, shall be straight or have a curve radius at least equal to the specified minimum curve radius of the EUT” and delete “Additional field or simulation tests are required for across-the-road speed meters that have a specified minimum curve radius lower than the road used for the metrological field test”	No, we don't see the advantage of the proposal. From the proposal it doesn't follow that tests have to be carried out at a road with curve radius equal to the minimum curve radius of the EUT.
<b>FR 228</b>	2	4.4		te	The number of tests is not sufficient to test all conditions for manual speedmeters (different types of vehicles, different speeds, the approaching and departing vehicles, values of the curve radius,...). The sentence “Larger numbers of measurements might be necessary when several installation conditions or specific scenarios are tested” is not sufficient.	Number of tests to discuss (at least 200 for manual speedmeters).	NO, you can demand higher number with your national legislation

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FR 229	2	4.5		te	The uncertainty (“0.6 km/h at speeds up to and including 100 km/h and 0.6 % of the speed value at speeds above 100 km/h” and “0.25 km/h at speeds up to and including 100 km/h and 0.25 % of the speed value at speeds above 100 km/h”) is low and is very restrictive. It is possible to have an uncertainty equivalent to the third (and not the fifth) of the MPE as in OIML G19. Moreover, for the linearity test, it is not adapted for tests in the field.	Authorize uncertainties: - 1 km/h at speeds up to and including 100 km/h and 1 % of the speed value at speeds above 100 km/h - 0.33 km/h at speeds up to and including 100 km/h and 0.33 % of the speed value at speeds above 100 km/h if realised by simulation and optional (see comment for part 1, 6.5).	Yes, see NL 044
FR 230	2	4.6	b)	te	The condition b) “The EUT uses the mathematical operation "rounding toward zero (truncating)" seems contrary to the requirement to use only integer values. (see comment part 1, 6.2/6.3). It seems values with higher digit can be used for metrological controls.	Clarify.	Clarification  Higher precision values can be obtained in the special “verification” mode, if implemented
FR 231	2	4.9	b)	te	As indicated for part 2, 4.2, tests shall be realised for all conditions and not only by traffic simulation. Metrological field tests are mandatory.		OK, this is stated in the new first sentence of 4.2 and cleared in the Part 1.
FR 232	2	6.3		te	“The fault value is determined from the mean error of at least 25 measurements”.  It is not possible to use only the mean error, all individual values shall be used. 25 measurements is too high, especially compared to the number of tests in the field.	Replace the sentence by “The fault value is determined from each individual value of at least 5 measurements”.	We clarified the sentence. There is no more a minimum number of measurements specified.
FR 233	2	6.4		te	It is not sufficient to only make reference to OIML D11 to realize tests. As clause 9.2.1 of OIML D11:2013 establish that OIML Recommendation shall in all cases describe:  - the manner in which the instrument shall be tested, and  - The allowed changes in the performance of the EUT.  These two aspects need to be clearly defined by R91.	Reproduce some tables of OIML D11 in order to describe the manner in which the instrument has to be tested in this part.	NO, we have checked with OIML and it is sufficient to refer to OIML D11. The main idea of OIML D11 and OIML D31 that you just reference in your recommendation.

<sup>1</sup> **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 \*\*)

<sup>2</sup> **Type of comment:** **ge** = general **te** = technical **ed** = editorial

## Template for comments and secretariat observations

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Project: TC 7/SC 4/p 3

MB/ NC <sup>1</sup>	Line number	Clause/ Subclause	Paragraph/ Figure/Table	Type of comment <sup>2</sup>	Comments	Proposed change	Observations of the secretariat
					<p>For the previous WD, it is indicated that it is not necessary because of the survey but it is not compliant with OIML rules (see D11) and there will be question on the conditions to realize the test.</p> <p>For example, for RF electromagnetic fields test, shall be each frequency tested or is it possible to test by scanning the frequencies ?</p>		
<b>FR 234</b>	2	6.7		te	The small curve radii of the road is not a factor of disturbance for all speedmeters. Some speedmeters will be always used with the small curve radii.	Clarify.	<p>Clarification</p> <p>With 6.7 we gave an option to include other possible disturbance test, which now can not be foreseen.</p> <p>Curve radii is just an example ...</p>
<b>FR 235</b>	2	7		ed/te	<p>The requirements for specific tests are worded differently according to the technology of the instrument: for 7.1, it is “shall”, for 7.2 to 7.4, it is “should” and there is no sentence for the others.</p> <p>The tests of requirements are mandatory and shall be realized if the test is applicable.</p>	Introduce specific tests with sentences “Specific test procedures shall be performed to determine”	OK, changed shall and should ...
<b>FR 236</b>	2	7.7.2		te	It is not relevant to realize specific tests for the ego speed. It is included in the other tests of moving speed meters.	Delete the test.	NO, it is necessary to do this. There are several different possible technical way to measure EGO speed: internal pulses, GNSS, Doppler radar ...

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## Additional text for comment SE-002

Information from Swedish Police Authority and Swedish Transport Administration. The latter being responsible for implementing the Swedish Government's mission to make Sweden world leading in traffic safety by implementing and developing the Vision Zero strategy.

In 1997, the Swedish Parliament adopted a new long-term goal and strategy for road safety, Vision Zero. The goal is that no one should be killed or seriously injured in a road accident. Vision Zero is an ethical principle stating that it is not acceptable for human mistakes to have fatal consequences. It can be viewed as a paradigm shift, where the ultimate responsibility for road safety is shifted from the individual road-user to those who design the transport system, for example, road management bodies, vehicle manufacturers, legislators, commercial transport operators, the police authority and others. The responsibility of the road-user is to comply with laws and regulations. Here the speed measuring instruments and their use by the Police is one of the important tools where the legal metrology community plays a very important role in this strategy.

Vision Zero has inspired road safety interventions in several countries resulting in The Stockholm Declaration which was the outcome from the 3rd Global Ministerial Conference on Road Safety held in Stockholm 19-20 February 2020. This ambitious and forward-looking statement connects road safety to the implementation of the 2030 Agenda for Sustainable Development. It also reflects the recommendations of the conference's independent Academic Expert Group and its scientific assessments of progress made during the last decade. On 31 August 2020 the resolution to improve global road safety was adopted by the United Nations General Assembly. This is the reason for us to emphasize that it is important that the technical requirements on the speed meters meet the needs of the society.

In order to effectively enforce speeding the development of technical requirements needs to adapt to the intended use of the instruments. Within the Vision Zero strategy, the main objective is to refrain drivers from speeding not to fine them. This calls for visible enforcement measures and instruments giving as accurate measurements as possible in well-defined traffic situations. To cite a traffic police officer: "People will speed wherever they can however most likely not in curved roads. They will speed on straight roads and if they see a police car, they will automatically stop speeding. Since both the laser and the radar measures instantly and with a lot of pulses there will be plenty of measurements that one could use fining people or reporting people for the crime that speeding is."

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