1	2	(3)	4	5	(6)	(7)				
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted				
	Remarks of the Secretary on the DE comment on 6.4.4.2 are indicated in red. This should be discussed during the third session of AVLI. Please also check the plausibility of section 5.8 in connection with 5.8.1. od AVLI 01-03 Rev 2a									
ΙΤ	Whole text		Ge	The whole text should be aligned, where possible, with Regulation 48. Suggested cross-check between this proposal and Reg. 48. Particularly the "Definitions" of Regulation 48 have to be used for type approval of lighting and light signalling devices; since the same devices are often used both on road vehicles and on agricultural vehicles, it is essential that definitions are aligned. Of course introduction of specific ones for agricultural features and components could be necessary. Procedures, formats and general specification should be the same, except where specific requirements for agricultural vehicles are needed. Also individual specifications should follow a similar approach. For example specific indication on which lamps "may be combined" or "may be grouped" each other are no longer used in Reg. 48, where a general requirement on this topic cover all the different possibilities.	Align the text with Reg. 48, wherever possible.	Editorial remark. Task Force should examine the document and propose the editorial amendments via Email communication. Members: Stefano Pagliarani, Andreas Schauer, Gerd Kellermann (cc), Derwin Rovers (cc)				
IT	Clause 2	Whole text	Ge	It is suggested a cross check with Reg. 48	Align the text with Reg. 48, wherever possible.	See IT above				
IT	Clause 3	Whole text	Ge	The paragraph is not exactly the same of Reg. 48. Apart from AFS, other paragraphs have been deleted. Consistency with Reg. 48.	Keep alignment with Reg. 48, wherever applicable.	See IT above				
IT	Clause 6	Individual specification	Ed	Consistency with Reg. 48.	If accepted, the amendment above shall be introduced also for all other lamps.	See IT above				
IT	Clause 6	Individual specification	Те	Consistency with Reg. 48. It is proposed the introduction of the H plane.	If accepted, the amendment above shall be introduced also for all other lamps.	See IT above				
CN	1.10.3.2		Ed	Last "vehicle" not italic but bold (unless you have a		Replace "tractor" by "vehicle"				

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
Н				specific reason for this?)		where appropriate.
NL	2.1.1		Ge	How literally does one have to apply dimensions and exterior shape? What if e.g. the hood or the fender is more square-shaped, or more rounded?		Keep present text
NL	2.1.2		Ge	What if a lamp, with another approval number, is located at the same or slightly different position?		Keep present text
CN H	2.2		Ed	Vehicle rather than vehicls		ОК
CLE PA	2.3	Definitions	Ed	Misspelled word "Unladen vehicls tractor"	Change text to ""Unladen vehicle -tractor"	ОК
IT	2.5.1	Equivalent lamps	Те	Reference to Reg. 37 is wrong.	Make reference to Reg. 48	See FI below
FI	2.5.1.		Ed	Unclear text, it could be corrected identical with Reg. No. 48 as proposed.	"Equivalent lamps" means lamps having the same function and approved under Regulation No. 37 or in conformity with the same requirements authorized in the country in which the vehicle is registered; such lamps may have different characteristics from those of the lamps with which the vehicle is equipped at the time of approval on condition that they satisfy the requirements of this Regulation;	OK
CN H	2.5.8 2.5.9 6.5.1 (3x) 6.5.11 (2x) 6.5.12 (2x) 6.6.12		Ge	I thought that when making the text future-proof, we would have replaced the word tractor everywhere in the text. Now this is done in the locations where only tractor was mentioned. But on those spots where the original text showed "tractor or NRMM", the NRMM was dropped, but tractor not replaced by vehicle. Is this intentional?		Replace "tractor" by "vehicle" in 2.5.8 and 2.5.9, keep "tractor" for the "rest"

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./	Paragraph/ Figure/Table/	Type of	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	Annex (e.g. 3.1)	Note (e.g. Table 1)	com- ment ²	<u>(in English!)</u>	(in English!)	on each comment submitted
	6.15.1 (2x)					
	6.17.1					
	6.19.4.2					
	6.22.9.1 (4x)					
	6.22.9.2					
FI	2.5.16.		Ed	Definition "Front position (side) lamp", word "side" in brackets is not necessary.	Change "Front position (side) lamp", to "Front position lamp", throughout the whole Regulation.	OK
FI	2.5.17.		Ed	Definition "Rear position (side) lamp", word "side" in brackets is not necessary.	Change "Rear position (side) lamp", to "Rear position lamp", throughout the whole Regulation.	OK
DE	2.5.16.		Te	Unified definition	Delete (side)	OK
	2.5.17					
IT	2.5.19	Parking lamps	Те	Is it applicable for tractors?	To discuss if the definition is needed and keep it or not.	Keep definition
CLE PA	2.5.22.2.	Definitions	Te	This paragraph describes "Other plates and retro- reflecting signals which must be used to comply with a Contracting Party's specifications" but since we are	Delete	Not accepted
				inserting in Annex 6 and Annex 7 Signalling Panels and Lighting and signalling devices for external projection respectively, the presence of this paragraph may be in conflict with this intent.		
FI	2.5.26		Ge	Definition "Lane keeping lamp" on not used in Reg. No. 48. These kinds on lamps are defined in Reg. No. 48. as optional additional end-outline marker lamps visible from the front, which shall be installed as close as practicable to the rear.	Finland has no strict opinion, which one is better definition for these lamps: lane keeping lamp or end-outline marker lamp. This question could be discussed at the next AVLI meeting.	OK
DE	2.5.26		Ge	No definition, no requirements, no type approval for "Lane	Delete	OK
	2.5.27		Ed	keeping lamp	renumber	

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
				After deletion 2.5.27 has to be renumbered to 2.5.26"		
IT	2.5.29 NEW	New lamps	Te	What about manoeuvring lamps? Are they needed?	If YES keep definition from Reg. 48.	OK Specification in 6.XX needed (copy from R 48, 6.26 for trucks)
IT	2.6	Illuminating surface	Te	This definition is no more in line with Reg. 48, which has been modified (see point 2.9) Consistency with Reg. 48.	Keep text from Reg. 48.	ОК
FI	2.6.1.		Ed	Reference to cornering lamp must be added in definition "Illuminating surface of a lighting device".	(paragraphs 2.5.8. to 2.5.11. and 2.5.25.)	OK, check numbering (deletion of lane keeping lamp)
FI	2.6.2.		Ed	References to new lamps must be added in definition "Illuminating surface of a signalling lamp other than a retro-reflector".	(paragraphs 2.5.12. to 2.5.20., 2.5.23., 2.5.24. , 2.5.26. and 2.5.27.)	OK, check numbering (deletion of lane keeping lamp)
FI	2.6.3.		Ed	Wrong term "reflex-reflector" is used, also in paragraphs 2.11.4., 2.13. and 6.14.4.1 (without hyphen).	Change "reflex-reflector", to "retro-reflector", throughout the whole Regulation.	ОК
NL	2.6.4		Ge	Apparent new (wording) definition; why speak of "exterior light-emitting surface".		Use text of R 48 of apparent surface.
IT	2.10	Angles of geometric visibility	Te	This definition has been modified in Reg. 48, with some text moved to section 5 (see point 2.13). Consistency with Reg. 48.	Align text with Reg. 48.	OK, replace current text of point 2.10 by 2.13 of R 48 Rev 9. Copy at the end of chapter 5 points 5.28, 5.28.1, 5.28.2 and 5.28.3 of R 48 Rev 9 to become 5.17, 5.17.1, 5.17.2 and 5.17.3.
FI	2.11.3		Ge	Term "device for indirect vision" could be used instead of "rear-view mirror", as in the Reg. No. 46. This concerns also the paragraphs 6.1.4.3., 6.2.4.3., 6.3.4.3. and	Change "rear-view mirror ", to "device for indirect vision ", throughout the whole Regulation.	OK

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
	, , ,	, ,		6.25.12.		
FI	2.11.4.		Ed	Term "lateral" on used instead of "side" with reflectors (also in the paragraph 2.13) .	Change "lateral" to "side".	OK
FI	2.13.		Ed	There are two definitions for "A single lamp", 2.13. and the new 2.14.1.	Delete the paragraph 2.13.	ОК
IT	2.13	A single lamp	Те	Text to be deleted due to new point 2.14	Delete paragraph.	ОК
NL	2.14		Ge/Ed	There is possibly a restructuring of the wording of the paragraph(s) for "single lamps" on its way in GRE for R.48.		OK
CN H	2.14.2	7th line	Ed	replace "dose" with "close"		OK
DE	2.16.		Ge	That is not a definition, you can require a mandatory or optional installation of lamps.	delete	Align with R 48; replace "presence" by "installation"
NL	2.17		Ed	Suggestion to change the wording to "failure tell-tale".		Align with 2.18 of R 48, operating tell-tale
				Why the paragraph has been deleted.		
IT	2.19	Colour	Те	Explanation to be provided. Consistency with Reg. 48.	Insert text from point 2.29 of Reg. 48.	Keep former 2.19
CLE PA	2.19.4.	New Definition	Те	Paragraph 6.21. contains description of conspicuity marking but no definition is given. Insert a new definition.	Insert new definition as in Reg. 48 as follows: ""Conspicuity marking" means a device intended to increase the conspicuity of a vehicle, when viewed from the side or rear (or in the case of trailers, additionally from the front), by the reflection of light emanating from a light source not connected to the vehicle, the observer being situated near the source.	OK

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
FI	2.20.		Ed	Definition "Bend lighting" is not used in the proposed text.	Delete the paragraph 2.20.	OK
DE	2.xx		Ge	A definition for external projections is missing	define	[delete]
IT	5.9	General specification	Те	Text is not clear and NOT in line with Reg. 48 (see point 5.9). Suggested consistency with Reg. 48.	Insert text from point 5.9 of Reg. 48.	ОК
IT	5.10	General specification	Те	Text is NOT in line with Reg. 48 (see point 5.10). Suggested consistency with Reg. 48.	Insert text from point 5.10 of Reg. 48.	OK
DE	5.14		Ge	As consequence of 2.5.26	Delete the line "Lane keeping light: White"	OK
FI	5.14.		Ed	Word "light" used instead of "lamp".	Lane keeping light lamp: white	See DE
CLE PA	5.14.	The colours of the light emitted by the lamps	Te	The colour of the light emitted by the Signalling panels is not specified. So on top of current page 20, following the description of Side retro-reflector insert a new paragraph with the requirements for colours of the Signalling panels.	Insert a new paragraph with colour requirements as follows: "Signalling panels: White/Red stripes"	OK
DE	5.17		Ed	What does "external projections" mean?	To be clarified	Delete 5.17 in first step
FI	6.1.		Ed	Misspelling of "headlamp".	Main-beam head lamps headlamps	OK
IT	6.1.4.3.	Length	Ed	Alignment with Reg. 48 Corresponding text introduced.	As near to the front of the vehicle tractor as possible; however, This requirement shall be deemed to be satisfied if the light emitted must does not in any circumstances cause discomfort to the driver either directly or indirectly through the devices for indirect vision rear-view mirrors and/or other reflecting surfaces of the vehicle tractor	Align with corresponding R 48 text
DE	6.1.8		Ed	Regulation language	Substitute may by shall	Delete 6.1.7, 6.1.9 (permission grouped, combined) and insert 5.7 of R 48; check also plausibility for all other lamps. Delete 6.1.8, same applies to

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
						other lamps
IT	6.1.11	"Circuit closed" tell- tale	Te	Pending decision on colors. Reg. 48 does not specify colors because prescriptions are present in R 121 (and ISO 2575). A decision has to be taken for R 86. If the color requirement is introduced here, then it should be done also for other lamps (i.e. dipped-beam). What about prescriptions on symbols?	Mandatory. Color: blue [?]	Align with R 48, i.e. delete color (for all lamps)
FI	6.1.12.1.		Те	Allowed maximum intensity could be increased to same as in Regs. No. 48. and 53.	The aggregate maximum intensity of the main beams which can be switched on simultaneously shall not exceed 225,000 cd 430,000 cd, which corresponds to a reference value of 100.	OK
IT	6.1.12.1	Other requirement	Те	Alignment with Reg. 48 Corresponding text introduced.	The aggregate maximum intensity of the main The sum of maximum intensities of driving beams which can be switched on simultaneously shall not exceed 225,000 cd 430,000 cd which corresponds to a reference value of 100.	OK
IT	6.1.12.2	Other requirement	Те	Alignment with Reg. 48 Corresponding text introduced.	This maximum intensity shall be obtained by adding together the individual maximum intensities measured at the time of component type approval and shown on the relevant approval reports. reference marks which are indicated on the several headlamps. The reference mark "10" shall be given to each of the headlamps marked "R" or "CR".	OK
FI	6.1.12.2		Te	Unclear text, it shall be corrected identical with Reg. No. 48 as proposed.	This maximum intensity shall be obtained by adding together the individual maximum intensities measured at the time of component type-approval and shown on the relevant approval reports reference marks which are indicated on the several headlamps. The reference mark "10" shall	OK

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
					be given to each of the headlamps marked "R" or "CR".	
IT	6.2.2	Dipped- beam headlamp Number	Te	Content of par. 6.2.4.2.1 to be moved here.	Two (or four - see paragraph 6.2.4.2.1.). In the case of vehicles equipped for the fitting of front mounted equipment or machinery, the fitting of an additional pair of dipped-beam headlamps is allowed.	Delete comment
NL	6.2.4.1		Те	Should this not be improved by e.g. setting, at least, some minimum requirements?		Keep present text
IT	6.2.4.2	Dipped- beam headlamp Height	Te	Consistency with Reg. 48. Paragraph to be re-drafted.	From the ground:	Delete comment
IT	6.2.4.2.1 NEW	Dipped- beam headlamp Height	Te	Text to be improved and clarified. If the derogation is needed, the proper value is 350 mm (as per Reg. 48).	If only two dipped-beam headlamps are fitted Minimum 500 mm; [this value may be reduced to 350 mm for vehicles with a maximum width not exceeding 1,300 mm.] and	OK
IT	6.2.4.2.2 NEW	Dipped- beam headlamp Height	Te	Text to be improved and clarified	Maximum 1,500 mm	OK
IT	6.2.4.2.3 NEW	Dipped- beam headlamp Height	Te	Text to be improved and clarified. NB: red wording is the standard formula of Reg. 48 when a derogation is needed.	This distance The above value may be increased to 2,500 1,500 mm, if the height of 1,500 1,200 mm cannot be observed due to the design, taking account of the conditions of use of the vehicle tractor and its working equipment where the shape, structure, design or operational conditions of the vehicle and its working equipment(s) prevent compliance with the 1,500 mm value.	OK
DE	6.2.4.2.1		Те	Threshold of 4,000 mm should be discussed in the group		Keep current 3,000 mm

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
IT	6.2.6	Dipped- beam headlamp	Ed	Consistency with Reg. 48.	A lignment Orientation.	OK, throughout whole document where appropriate
IT	6.2.6.1	Dipped- beam headlamp	Te	Text to be improved and clarified.	Horizontal alignment Vertical orientation	OK
ΙΤ	6.2.6.1.1	Dipped- beam headlamp Orientation	Te	Text to be improved and clarified. Consistency with Reg. 48.	If the height of the dipped-beam headlamps passing lamps is equal to or greater than 500 mm and equal to or less than 1,500 1,200 mm, it must be possible to lower the dipped passing beam by between 0.5 and 6 4 per cent; The initial downward inclination of the cut-off of the dipped-beam to be set in the unladen vehicle state with one person in the driver's seat shall be specified within an accuracy of 0.1 per cent by the manufacturer and indicated in a clearly legible and indelible manner on each vehicle close to either headlamp or the manufacturer's plate by the symbol shown in Annex [9]. The value of this indicated downward inclination shall be defined in accordance with paragraph 6.2.6.1.2.	
ΙΤ	6.2.6.1.2 NEW	Dipped- beam headlamp Orientation	Te	Text to be deleted and replaced by [] Consistency with Reg. 48.	Depending on the mounting height in meters (h) of the lower edge of the apparent surface in the direction of the reference axis of the dipped-beam headlamp, measured on the unladen vehicles, the vertical inclination of the cut-off of the dipped-beam shall, under all the static conditions of Annex [8], remain between the following limits and the initial aiming shall have the following values: h < 1.0 Limits: between -0.5 per cent and -2.5 per cent Initial aiming: between -1.0 per cent and -1.5 per	Keep current text

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
FI	6.2.6.1.2.		Ge	Is the text "If the dipped-beam headlamps in a height above 1,500 mm are switched on, the maximum travel speed is limited to 40 km/h. Appropriate information must be given to the user" rather a national road-use	cent 0.8 < h < 1.5 Limits: between -1.0 per cent and -[3.5] per cent Initial aiming: between -1.5 per cent and -2.0 per cent Where the dipped beam headlamps are fitted in the range between 0.8 and 1.0 m the applicant may choose which of the above orientation range will use; the application for the vehicle type- approval shall, in this case, contain information as to which of the two alternatives is to be used. The above limits and the initial aiming values are summarized in the diagram below. DIAGRAM TO BE ADDED Delete this requirement from paragraph 6.2.6.1.2.	OK
IT	6.2.6.1.3 NEW	Dipped- beam headlamp Orientation	Те	requirement than a type-approval requirement? Text to be added. Consistency with Reg. 48.	For the additional pair of dipped beam (if fitted in accordance to paragraph 6.2.2. above), where the headlamps exceed a height of 1,500 mm, the vertical inclination of the cut-off measured on the unladen vehicles shall be between: -[2.0] per cent and -[6.0].	Not added
IT	6.2.6.2.1	Levelling device	Te	Text to be improved and clarified.	A When fitted the headlamp leveling device may be automatic or manually adjustable. The manually adjustable devices shall may be operable from the driver's seat.	Keep current text
IT	6.2.6.2.2 NEW	Levelling device	Te	Text to be deleted and replaced by []	Devices which are adjusted manually, either continuously or non-continuously, shall have a stop position at which the lamps can be returned to the initial inclination by means of the usual	Keep current text; delete last section: "The number No. 48."

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
					adjusting screws or similar means. Continually adjustable devices shall have reference marks indicating the loading conditions that require adjustment of the dipped-beam. Operation range of the headlamp leveling-devices shall be such as to ensure compliance with the range of values prescribed in paragraph 6.2.6.1.1. or 6.2.6.1.2. in all the loading conditions defined in Annex [8] of this regulation.	
IT	6.2.6.2.3 NEW	Levelling device	Те	Text to be deleted and replaced by []	In the event of a failure of the headlamp levelling device, the dipped-beam shall not assume a position in which the dip is less than it was at the time when the failure of the device occurred	Not added
DE	6.2.8 6.3.8 6.4.8. 6.7.8 6.10.8 6.13.8 6.13.9		Ed		s. 6.1.8	See comment DE on 6.1.8
ΙΤ	6.2.10	Electrical connection	Te	Text to be added. Consistency with Reg. 48.	The control for changing over to the dipped beam shall switch off all main-beam headlamps simultaneously. The dipped-beam headlamps may remain switched on at the same time as the main-beam headlamps. In the case where the pair of additional dipped-beam headlamps is installed (as per paragraph 6.2.2.), electrical connections shall be such	OK

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
					that two pairs of dipped-beam headlamps are never switched on [operated] at the same time.	
FI	6.2.11.		Ge	The text "Passing beam headlamps with light source(s) producing the principal dipped beam (as defined in Regulation No. 48) and having a total objective luminous flux which exceeds 2,000 lumens are prohibited." is missing in the proposal. It was added to Reg. No. 86 as Supplement 5 to 00 (entry into force 24.10.2009), which was based in the proposal of Netherlands ECE/TRANS/WP.29/GRE/2008/54. Background information to AVLI: Austria's document in	Finland has no clear proposal to this item. However, the glare problems of gas- discharge and LED headlamps should be discussed at the next AVLI meeting.	Add Supplement 5 to R 86 00 Series text, however delete first sentence.
				WGAT meeting on 23.4.2013 raised concerns about gas-discharge headlamps, also: https://circabc.europa.eu/sd/d/2f0b0e76-3175-4234-b6d7-283f3cb4a035/point4_RVFSR_LEGISLATIVE_REFS_WGAT_comments_AT.pdf		
NL	6.4.1		Те	Should this not be improved by e.g. mandate at least one reversing lamp?		Put [Optional], decision by GRE
DE	6.4.2		Те	At least one reversing lamp should be mandatory	Optional seems not to be sufficient	See DE above, decision by GRE
DE	6.4.4.2 6.5.4.2 6.7.4.2		Те	A maximum height of 4,000 mm is not acceptable	Adjust height	Replace 4000 mm by 2500 mm, Add requirements for vertical inclination will be proposed by Dr. Manz
	6.8.4.2					To be also checked for all other lamps individually:
	6.9.5.1.2 6.19.4.2					Remarks from the secretary:
	6.20.4.3					6.5.4.2 to 6.9.5.1.2: 4000 mm should be acceptable for additional front and rear position, direction indicator

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
						and stop lamps.
						6.19.4.2: Can it be assumed that a DTR according to R 87 Rev 3 due to its limited light intensity is not glaring and therefore a mounting height of 4000 mm can be accepted?
						6.20.4.3: a cornering lamp according to R 119 should be treated like the dipped-beam headlamps, i.e. additional cornering lamps should be also allowed up to 3000 mm.
NL	6.5			(Question Chairman) How could we generally improve the visibility and efficacy of the turn signals, in particular that of the side and rear direction indicators?		Already addressed, additional direction indicators allowed
DE	6.5.1		Те	Cat. 2 does not exist	Replace in brackets 1, 1a, 1b, 2a, 2b,5)	OK
DE	6.5.3		Те	Discuss cat. Of DI		Align with R 48
						Adapt Annex 5 appropriately (editorial, no change of arrangements)
CN	6.5.4.2		Ed	Height: Above the ground not less than 400 mm and NOT		OK
Н				more than 2,500 mm and		Re-arrange last sentence:
						For vehicles with a maximum width not exceeding 1,300 mm not less than 350 mm above the ground.
						Possible improvement of the wording for the optional DI,

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
						no height restriction, but requirement: not exceeding the max. height of the vehicle.
CN H	6.5.4.3 (2x) 6.15.3 6.15.4.3 (3x) 6.23.1		Ge	In some instances, I think the word tractor was not yet replaced by vehicle in our last revision of the PT23.		Already covered by general decision above
IT	6.5.5	Direction indicators Geometric visibility	Те	Regarding horizontal angles, a new sentence should be added, in order to keep alignment with Directive 2009/61/EC.	Horizontal angles: See Annex 5 The value 10° (Annex 5, Arrangement D) given for the inward angle of visibility of the front indicator may be reduced to 3° for vehicles with an overall width not exceeding 1400 mm.	OK, add to Annex 5 below Arrangement D
IT	6.7.5	Stop Lamps Geometric visibility	Te	Consistency with Reg. 48. It is proposed the introduction of the H plane, as defined in Reg 48.	Vertical Angle: 15° above and below the horizontal. The vertical angle below the horizontal may be reduced to 10° if or 5° where the lamp is situated less than has its H plane at or below 1,900 1,500 mm above ground, to 5° in the case of lamps less than respectively 750 950 mm above from the ground	OK, Introduce H plane (5.8.1 of R 48)
DE	6.8 6.9		Те	s.def.	Delete (side)	OK
CN H	6.8.11		Те	Shouldn't we specify the colour of the tell-tale?		No
NL	6.9			(Question Chairman) How could we generally improve the rear visibility of agricultural vehicles?		
CN H	6.9.5.1.1	second paragraph	Ed	we are talking about the rear position (side) lamps. Not about the rear reflectors		

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
IT	6.9.5.1.3 NEW	Rear pos. Lamps Geometric visibility	Те	Text to be improved and clarified.	At least one pair of devices must meet the requirements set in paragraph 6.9.5.	
CN H	6.9.11		Те	Color: amber or yellow. Shouldn't this be green, as I assume they will be lit together with the regular lights?		
DE	6.10.1		Ge	Necessary safety feature	Substitute optional by mandatory	
	6.10.4.2		Ge	Height of 2,500 mm not acceptable, safety reason	Stay with 1,900 mm	
CN H	6.10.11		Те	Do we need to specify a colour for the "Circuit closed" tell-tale?		
NL	6.12.1		Te	We should consider improving the requirements for presence of end-outline marker lamps, e.g. to align with the requirements as currently (for many years) in R.48		
DE	6.13.7		Ge	Works lamps are not type approved, so they should not be grouped with another lamp	Instead of "may" write "shall not"	
NL	6.13.10		Ge/Te	How should one deal with this? It's always possible to shine (some) light on the road with a work lamp.		
IT	6.14.2	Rear reflectors	Те	Text to be improved and clarified.	Number: Two. Additional pair(s) of devices are allowed in application of or four more (see paragraph 6.14.5.1.).	
IT	6.14.5.1.1	Rear reflectors Geometric visibility	Te	Text to be improved and clarified.	Two retro-reflectors must keep within the maximum height of 900 mm above the ground. However, this upper limit may be increased to not more than 1,200 1,500 mm where the shape, structure, design or operational conditions of the vehicle and its working equipment(s) prevent compliance with if it is impossible to keep within the height of 900 mm limit, without having to use fixing devices liable to be easily damaged or bent.	

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
IT	6.14.5.1.3 NEW	Rear reflectors Geometric visibility	Те	Text to be improved and clarified.	At least one pair of devices must meet the requirements set in paragraph 6.14.5.	
CLE PA	6.15.1.	1 and 2	Те	Substitute word "tractor" with "vehicle"	"Mandatory on all vehicles tractors the length" "Optional on vehicles tractors the length"	
CLE PA	6.15.3.	1	Те	Substitute word "tractor" with "vehicle"	"One or two each side of vehicle tractor where"	
NL	6.15.4.3		Те	This requirement seems to ensure that the vehicle's length cannot exceed approx. 12m. And what would the requirements for NRMM (or trailers) be?		
NL	6.15.4.6		Ed	Typo (+ possible error in numbering?)		
DE	6.15.4.6		Ed		Renumber to 6.15.6	
IT	6.16.1	Rear plate Lamp	Те	By this change the presence of the lamp would be linked to the presence of the plate support.	Presence: Optional. Mandatory when the support for the registration plate is fitted on the vehicle.	
DE	6.16.1 6.16.2. – 6.16.6 6.16.8, 6.16.10, 6.16.11		Ge Te Ge	There is no reason for optional rear registration plate lamps Site is wrong because the whole area is illuminated s.def.	Change optional to mandatory Change site to area Delete (side)	
CLE PA	6.17.1	1	Те	Substitute word "tractor" with "vehicle"	"Mandatory on vehicles tractors having all forward"	
FI	6.17.5.		Ed	Term "towed machine" should be identical with Regulation (EU) No 167/2013 "interchangeable towed	Change "towed machine" to 2013 "interchangeable towed equipment", throughout the whole Regulation.	

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex	Paragraph/ Figure/Table/ Note	Type of com-	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
	(e.g. 3.1)	(e.g. Table 1)	ment ²			
				equipment". This is used also in paragraphs 6.22.9.1. and 6.22.9.2.		
DE	6.17.5.1.1		Ge	Why rear reflectors?		
DE	6.19.1 6.19.4.2		Ge Ed	Most of the other vehicles types will use DRL, for better conspicuity it should be mandatory for cat. T	Change optional to mandatory	
				Refer to incorrect paragraph number		
NL	6.19.4		Te	The positioning requirements of the SML differ from those of the side retro-reflector. SML's and side retro-reflectors are often e.g. combined. With the apparently differing positioning requirements this may no longer be possible. Was this perhaps done for any specific reason?		
CLE PA	6.19.4.2.	2	Те	Substitute word "tractor" with "vehicle"	"In the case of vehicles tractors equipped for the"	
FI	6.19.7.1.		Те	In the Reg. No. 48 it is possible to have lamps referred to in paragraph 5.11.switched ON with the daytime running lamps. We have had complaints in Finland that drivers left the DRL's ON even in dusk, fog or heavy rain. This is more troublesome without rear position lamps on with DRL's. Obligatory automatic passing-beam ON function will help the situation in M ₁ -catecory vehicles, but it in not required	Furthermore, the lamps referred to in paragraph 5.11. are not may be switched ON when the daytime running lamps are switched ON.	
				in tractors. Finland would prefer the manufacturer's option to choose if the other lamps are switched on with DRL as in Reg. No. 48.		
CN H	6.21		Ed	Conspicuity markings: Presence should be marked as 6.21.1 (not 6.22.1)		
CLE PA	6.21.1	1	Те	Conspicuity markings have proven to be a useful and practical solution to enhance visibility and safety of	Change "Optional " to Mandatory as follows:	

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
				vehicles whose mass or bodyworks tends to be larger than normal. The presence of conspicuity markings should be made mandatory at least for vehicles greater than 6m in length and optional for those which are shorter.	Mandatory on all vehicles the length of which exceeds 6 m. Optional on vehicles the length of which does not exceed 6 m.	
CLE PA	6.21.4.	1	Те	Position for the conspicuity markings needs to be identified, so delete text "No individual specification" and insert new sub paragraphs 6.21.4.1., 6.21.4.2. and 6.21.4.3. as below	Delete "No individual specification"	
CLE PA	6.21.4.1.		Те	Insert new paragraph so the width, length and height of installed conspicuity markings should be specified.	 6.21.4.1. Width 6.21.4.1.1. The conspicuity marking shall be as close as practicable to the edge of the vehicle. 6.21.4.1.2. The cumulative horizontal length of the conspicuity marking elements, as mounted on the vehicle, shall equate to at least 70 per cent of the overall width of the vehicle, excluding any horizontal overlap of individual elements. 	
CLE PA	6.21.4.2.		Те	Insert new paragraph so the width, length and height of installed conspicuity markings should be specified.	6.21.4.2. Length 6.21.4.2.1. The conspicuity marking shall be as close as practicable to the ends of the vehicle and reach to within 600 mm of each end of the vehicle	
CLE PA	6.21.4.3.		Те	Insert new paragraph so the width, length and height of installed conspicuity markings should be specified.	6.21.4.3. Height	

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
					6.21.4.3.1. Conspicuity markings as low as practicable within the range: Minimum: not less than 250 mm above the ground. Maximum: not more than 1,500 mm above the ground.	
CLE	6.21.5.		Те	Visibility of conspicuity markings should be identified. Insert new paragraph 6.21.5. and sub paragraphs 6.21.5.1. and 6.21.5.2. on visibility.	6.21.5. Visibility The conspicuity marking shall be considered visible, if at least 70 per cent of the illuminating surface of the installed marking is visible when viewed by an observer positioned at any point within the observation planes defined below: 6.21.5.1. For rear and front conspicuity markings the observation plane is perpendicular to the longitudinal axis of the vehicle situated 25 m from the extreme end of the vehicle and bounded by: 6.21.5.1.1. In height, by two horizontal planes 1 m and 3.0 m respectively above the ground; 6.21.5.1.2. In width, by two vertical planes which form an angle of 4° outwards from the vehicle's median longitudinal plane and which pass through the intersection of the vertical planes parallel to the vehicle's median longitudinal plane delimiting the vehicle's overall width, and the plane perpendicular to the longitudinal axis of the vehicle that delimits the end of the vehicle.	

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
					6.21.5.2. For side conspicuity markings the observation plane is parallel to the longitudinal median plane of the vehicles situated 25 m from the extreme outer edge of the vehicle and bounded by: 6.21.5.2.1. In height, by two horizontal planes 1.0 m and 1.5 m respectively above the ground; 6.21.5.2.2. In width, by two vertical planes which form an angle of 4° outwards from a plane perpendicular to the vehicle's longitudinal axis and which pass through the intersection of the vertical planes perpendicular to the vehicle's longitudinal axis delimiting the vehicle's overall length and the extreme outer edge of the vehicle.	
CLE	6.21.6.		Те	Requirements for alignment should be inserted, so delete text "No individual specification" and insert	Delete description of 6.21.6. "No individual specification" Insert new sub paragraphs 6.21.6.1. and 6.21.6.2. as below: 6.21.6.1. To the side: As close as practicable to being parallel to the median longitudinal plane of the vehicle, compatible with the shape, structure, design and operation requirements of the vehicle; if this is not possible, it shall follow as close as practicable the contour of the outer shape of the vehicle. 6.21.6.2. To the rear and to the front: As close as practicable to being parallel to the	

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
					transverse plane of the vehicle, compatible with the shape, structure, design and operation requirements of the vehicle, if this is not possible, it shall follow as close as practicable the contour of the outer shape of the vehicle.	
NL	6.22			(Question Chairman) How could we generally improve the conspicuity of agricultural vehicles?		
DE	6.22.1		Ed/Ge	Under 6.21 a subsequent number is expected	Renumber to 6.21.1	
	6.22			Who deliver the signal, clarify or delete	delete	
NL	6.23.1		Te	In principle we do not see the need for ESS on agricultural tractors. However, if it's decided to include ESS it should only be considered for fast tractors.		
NL	6.23.7.3.1		Те	For R.48 we have -long ago and after elaborate debate- already agreed in GRE on a threshold of 50 km/h.		
NL	6.24.1		Ge	How to deal with the wording concerning "Provisions of use"?		
DE	6.25		Ge	s. def.	delete	
NL	6.25			(Question Chairman) How could we generally improve the conspicuity of agricultural vehicles?		
IT	6.25.1.1	Signalling panel	Te	As for the presence, in Italy it is mandatory only on the rear, and for tractors > 2,55 m. What about other Countries? Common approach to be defined.	Check content and decide if the currents text needs an amendment.	
IT	6.25.1.2	Signalling panel	Те	Requirement for implements and not for the tractor itself. Consistent with the Scope?	Discuss possible deletion of the paragraph.	
NL	6.25.1.2		Те	The requirements for warning panels to the side seem somewhat unclear.		

¹ **CP** = Contracting Party or Name of NGO

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

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
NL	6.26.2		Ge	It would be nice if the requirements would be included here.		
NL	6.27.12		Ge	How to measure/assess the discomfort?		
IT	Pag. 52	Figure	te	It is obsolete and has no heading (is it an Annex or what?). It should be deleted.	Delete this Figure.	
DE	Annex 1; 5.22		Ge	s. 6.22	Delete line and renumber following 2 lines	
IT	Annex 1	Whole text	Ge	It should be revised and aligned with the latest changes introduced in this regulation and, where possible, with Annex 1 of ECE Reg. 48	Modify accordingly.	
IT	Annex 2	Whole text	Te	It should be modified introducing the regulation number (86), amending to 01 the number of the series of amendment and changing the text accordingly.	Modify accordingly.	
IT	Annex 3	Whole text	Ge	It should be revised by using parts 1 to 4 of Annex 3 of Reg. 48. Consistency with Reg. 48.	Modify accordingly.	
	Annex 6 Figure 2		Ge	The part written below this figure is not really clear.		
	Annex 6, clause 3		Те	The reference in ECE 48 is not for surface colors but for active lamps. Both requirements and test method are not adequate.	When measured with a spectrophotometer in accordance with the provisions of CIE document No. 15 (1971) and illuminated with the CIE Standard Illuminant D65 at an angle of 45° to the normal and viewed along the normal (45°0 geometry), the colour of the material in new condition shall be located within the area defined by the chromaticity co-ordinates in table 1 and comply with the luminance factor.	
					"Luminance factor for yellow colour shall be	
					of regulation 48.	
					white colour shall be ≥ 0.25." White according to 2.31.1, Red according to 2.31.3	

¹ **CP** = Contracting Party or Name of NGO

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

Date: 2013-11-05 Document: AVLI 02-03 Rev 1 Comments and follow up on AVLI 01-03 Rev 1

1	2	(3)	4	5	(6)	(7)
CP ¹	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted
CLE PA	Annex 6, Clause 3	3	Те	The photometric requirements of white and red Signalling plates are currently specified as either those of Annex 7 of Reg. 69 or those in Reg. 104; however, as the stated requirements differ in both regulations, it would be advisable to quote compliance with just one Regulation for clarity purposes. This should be Regulation 104.	Delete text "The photometric requirements of Annex 7 of Regulation 69 or of Regulation 104 apply."	
NL	Annex 7		Ge	It is not really clear how to deal with this annex.		
CLE PA	Annex 7	5 and 6	Ed	For clarity and consistency purposes these paragraphs should be identified with sub points (a) and (b) as are paragraphs 8 and 9.	Delete hyphen s before paragraphs 5 and 6 and insert sub paragraphs (a) and (b) as below: (a) rear position lamp (b) rear reflector	
CLE PA	Annex 7	6 and 9	Te	The rear and front reflectors identified as interchangeable with the warning panels are much smaller in size and luminance than warning panels. For the extent of the external projections to be visible and safe, only the warning panels should be mandatory.	In paragraphs 6 and 9 delete text "reflector or" and add the word "mandatory" at the end of each paragraph as below: (b) rear reflector or warning panel mandatory (b) front reflector or warning panel mandatory	Delete Annex 7 in the first step and keep it for later inclusion of NRMM and other vehicles
				Consistency with Reg. 48.		
IT	Annex 8 NEW	Whole text	Те	Insert a new Annex to describe the state of loading of the vehicle. To be taken into account for the vertical orientation of the dipped-beam headlamps.	Introduce new Annex 8. See proposed text below.	
				Content to be discussed and agreed, in particular specified vehicle types.		

IT proposal for new Annex 8

Annex 8

States of loading to be taken into consideration in determining variations in the vertical orientation of the dipped-beam headlamps

Loading conditions on axles referred to in paragraphs 6.2.6.1.1. and 6.2.6.1.2.

- 1 **CP** = Contracting Party or Name of NGO
- 2 **Type of comment: ge** = general **te** = technical **ed** = editorial

Date: 2013-11-05 Document: AVLI 02-03 Rev 1 Comments and follow up on AVLI 01-03 Rev 1

1	2	(3)	4	5	(6)	(7)
CI	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment ²	Comment (justification for change) by the MB (in English!)	Proposed change by the MB (in English!)	Secretariat observations on each comment submitted

- 1. For the following tests, the mass of the passengers shall be calculated on the basis of 75 kg per person.
- 2. Loading conditions for different types of vehicles:

The angle of the light beam from the dipped-beam headlamps shall be determined under the following loading conditions;

- 2.1. Vehicles equipped for the fitting of mounted equipment [? Tractors...]:
- 2.1.1. Vehicle unladen and one person in the driver's seat;
- 2.1.2. Driver, plus mounted equipment fitted on the fitting device at the rear on the base of manufacturer instructions as to give the maximum technically permissible load on the rear axle or axles, or the maximum permissible mass of the vehicle, whichever occurs first, with at least 20% of the load on the front axle. Conversely, the front axle is so considered when the portable devices or machines are fitted on the fitting device at the front.

NB: Automotive requirement amended. ("exceeding a front axle load calculated as the sum of the front axle load of the unladen vehicle plus 25 per cent of the maximum permissible payload on the front axle"). To be discussed.

- 2.2. Vehicles with a load platform
- 2.2.1 Vehicle unladen and one person in the driver's seat;
- 2.2.2 Driver, plus a load so distributed as to give the maximum technically permissible load on the rear axle or axles, or the maximum permissible mass of the vehicle, whichever occurs first, with at least 20% of the load on the front axle. Conversely, the front axle is so considered when the load platform is at the front.
- 2.3. Towing vehicles without a load surface:
- 2.3.1. Unladen vehicle without a load on the coupling attachment and one person in the driver's seat;
- 2.3.2. Driver, plus technically permissible load on the coupling attachment in the position of the attachment corresponding to the highest load on the rear axle.

- 1 **CP** = Contracting Party or Name of NGO
- 2 **Type of comment: ge** = general **te** = technical **ed** = editorial