

Transmitted by IWG SLR

Informal document GRE-82-39
(82nd GRE, 22-25 October 2019,
agenda item 4)

Simplification of the UN Lighting and Light-signalling Regulations

**Progress report on the
Stage 2 / Step 1**

Workload and meeting pace

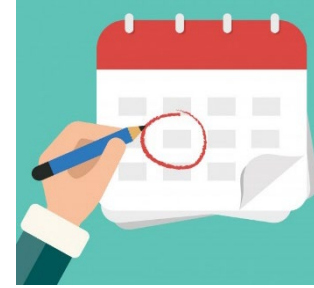
33 meetings held until now:

- | | | | |
|--------|---|---------|---------------------------------------|
| I. | 11 September 2014 in Brussels (BE) | XXII. | 29 Jan / 1 Feb 2018 in Shenzhen (CN) |
| II. | 23 October 2014 in Geneva (CH) | XXIII. | 4-6 April 2018 in Brussels (BE) |
| III. | 14 January 2015 in Brussels (BE) | XXIV. | 30 May / 1 June 2018 in Brussels (BE) |
| IV. | 13 April 2015 in Geneva (CH) | XXV. | 3-5 July 2018 in Brussels (BE) |
| V. | 13 October 2015 in Brussels (BE) | XXVI. | 24-26 September 2018 in Brussels (BE) |
| VI. | 5-6 November 2015 in Brussels (BE) | XXVII. | 10-12 December 2018 in Brussels (BE) |
| VII. | 15-16 December 2015 in Brussels (BE) | XXVIII. | 25-27 February 2019 in Brussels (BE) |
| VIII. | 13-14 January 2016 in Brussels (BE) | XXIX. | 27-29 March 2019 in Brussels (BE) |
| IX. | 29 February & 1 March 2016 in Brussels (BE) | XXX. | 22-24 May 2019 in Brussels (BE) |
| X. | 14-15 April 2016 in Brussels (BE) | XXXI. | 3-5 July 2019 in Brussels (BE) |
| XI. | 9-10 June 2016 in Brussels (BE) | XXXII. | 3-5 September 2019 in Tokyo (JP) |
| XII. | 5-7 September 2016 in Brussels (BE) | XXXIII. | 9-11 October 2019 in Brussels (BE) |
| XIII. | 5-7 October 2016 in Brussels (BE) | | |
| XIV. | 5-7 December 2016 in Brussels (BE) | | |
| XV. | 21-23 February 2017 in Brussels (BE) | | |
| XVI. | 22-24 March 2017 in Brussels (BE) | | |
| XVII. | 16-18 May 2017 in Tokyo (JP) | | |
| XVIII. | 13-15 June 2017 in Brussels (BE) | | |
| XIX. | 12-14 July 2017 in Brussels (BE) | | |
| XX. | 4-6 October 2017 in Brussels (BE) | | |
| XXI. | 18-21 December 2017 in Brussels (BE) | | |

Next meetings:

- SLR-34** on 4-6 November 2019 in Brussels (BE)
- SLR-35** on 11-13 December 2019 in Brussels (BE)
- SLR-36** on 8-10 January 2020 in Brussels (BE)
- SLR-37** on 2-4 March 2020 in Brussels (BE)

Entry into Force of Stage 1



**Amendments to existing UN Regulations:
15 October 2019**

**New UN Regulations:
15 November 2019**

Note by the secretariat

Informal document WP.29-178-15
178th WP.29, 25-28 June 2019,
Agenda item 8.4

ADOPTED PROPOSALS 46 AMENDMENTS, 7 CORRIGENDA AND 4 NEW UN REGULATIONS & SITUATION OF THEIR ENTRY INTO FORCE

177TH SESSION – MARCH 2019 (see the report of the session [ECE/TRANS/WP.29/1145, para. 146](#))

Situation at 21 June 2019

ADOPTED PROPOSALS				SITUATION OF ENTRY INTO FORCE		
UN Regulation No.	Subject of the UN Regulation	Document: ECE/TRANS/WP.29/...	Document status	Depositary notifications for the entry into force of the amendments and corrigenda*		Document symbol E/ECE/324/... E/ECE/TRANS/505/...
				Provisional CN [Possible date of entry into force]	Definitive CN Date of entry into force	
Amendments to existing UN Regulations						
0	International Whole Vehicle Type Approval (IWVTA)	2018/82	01 series	UNECE/TRANS/2019/05 15.10.2019		Rev.3/Add.0/Amend.1
3	Retro-reflecting devices	2018/91/Rev.1	03 series	UNECE/TRANS/2019/05 15.10.2019		Add.2/Rev.4/Amend.4
4	Illumination of rear registration plates	2018/92/Rev.1	01 series	UNECE/TRANS/2019/05 15.10.2019		Add.3/Rev.3/Amend.4
6	Direction indicators	2018/93/Rev.1	02 series	UNECE/TRANS/2019/05 15.10.2019		Add.5/Rev.6/Amend.5
7	Position, stop and end-outline lamps	2018/94/Rev.1	03 series	UNECE/TRANS/2019/05 15.10.2019		Add.6/Rev.6/Amend.8
9	Noise of three-wheeled vehicles	2019/6	08 series	UNECE/TRANS/2019/05 15.10.2019		Add.8/Rev.3/Amend.4
10	Electromagnetic compatibility	2019/20	06 series	UNECE/TRANS/2019/05 15.10.2019		Add.9/Rev.5/Amend.2
19	Front fog lamps	2018/95/Rev.1	05 series	UNECE/TRANS/2019/05 15.10.2019		Rev.1/Add.18/Rev.7/Amend.6

Work plan and time schedule for “Stage 2”

STAGE 2 = SIMPLIFIED REGULATIONS with technology neutral and performance based requirements

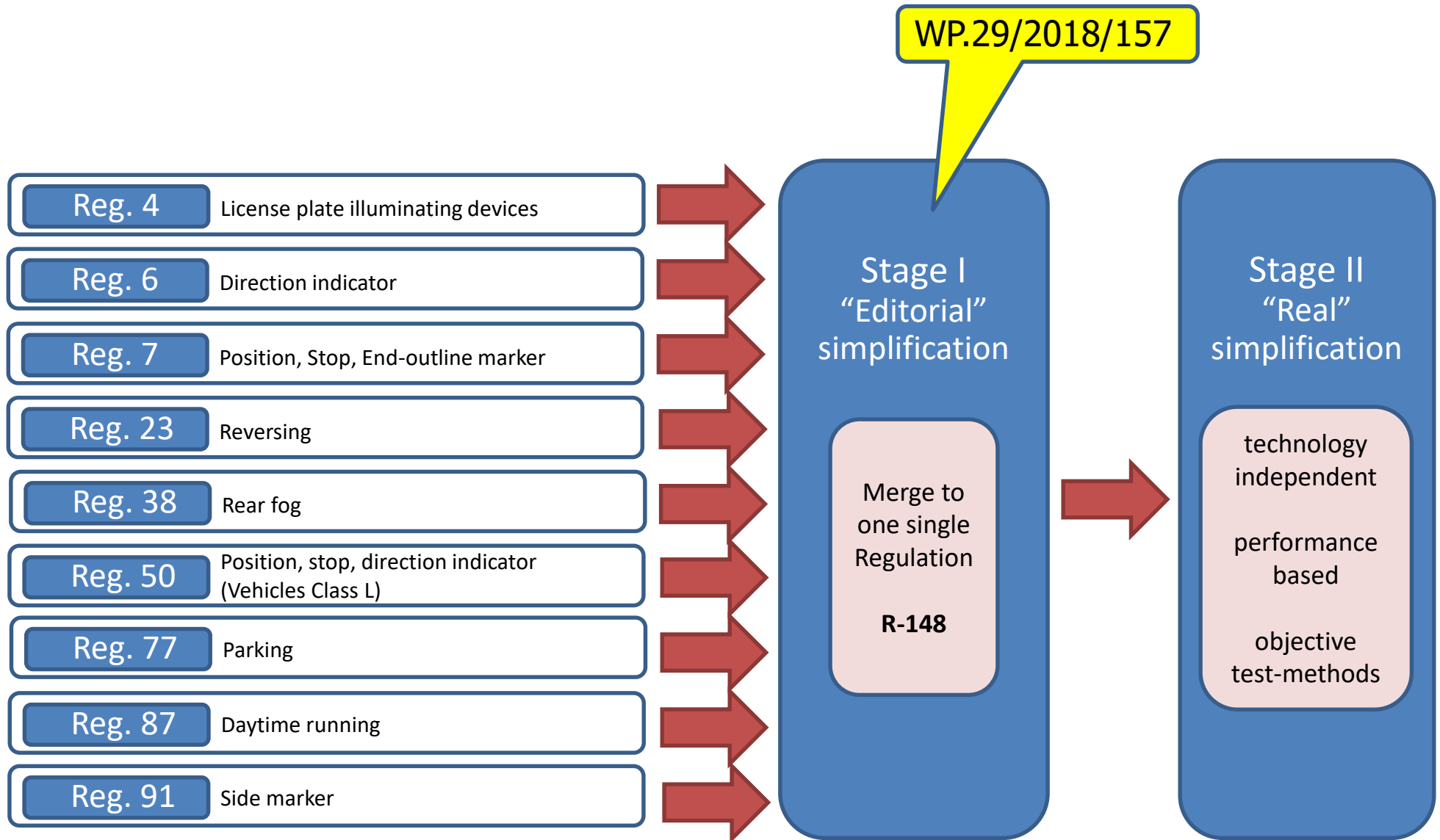
ECE/TRANS/WP.29/GRE/80
Annex II

STAGE 2	The overarching objective is to update and harmonize the technical requirements for lighting and light-signalling to be <u>suitable for global implementation under the 1958 and 1998 Agreements.</u>	
STAGE 2 STEP 1	Revise the technical requirements of the new LSD, RID and RRD UN Regulations, to become technology neutral with performance-based and objective test requirements taking into account glare and visibility.	
	Amendments will also be required to the installation UN Regulations taking into account the work of IWG-VGL.	
	Informal submission to the eighty-second session of GRE	October 2019
	Final consideration at the eighty-third session of GRE	April 2020
STAGE 2 STEP 2	Adoption by WP.29	November 2020
	Simplify and update the technical requirements of the UN installation Regulations (Nos. 48, 53, 74, 86), to become technology neutral with performance-based and objective test requirements	
	Informal submission to the eighty-sixth session of GRE	October 2021
	Final consideration at the eighty-seventh session of GRE	April 2022
	Adoption by WP.29	November 2022

UN Regulation No. 148

LIGHT SIGNALLING DEVICES (LSD)

Stage II – Regulation No. 148



Stage II – Regulation No. 148

Main progress made

TOPIC	MAIN IMPROVEMENTS	PARAGRAPHS MAINLY AFFECTED
Rearrangement of requirements	<ul style="list-style-type: none"> • Harmonised requirements' structure for different functions • Empty requirements are marked as empty 	Par. 5.
Error correction	<ul style="list-style-type: none"> • Avoid errors • Light source module marking 	Table 1, Table A2-1 Par. 3.3.5.4.
Alignment	<ul style="list-style-type: none"> • Max intensities direction indicator 	Table 8
CoP	<ul style="list-style-type: none"> • Restructuring and streamlining of the requirements 	Par. 3.5., New Par. 6.
Light Sources	<ul style="list-style-type: none"> • Technology neutral • Reduced need for amendments • Suitable for future technology 	Par. 3 + Annex (new)

This topic will be addressed by SLR depending on the GRE-82 decision concerning the approach proposed for R-149

Stage II – Regulation No. 148

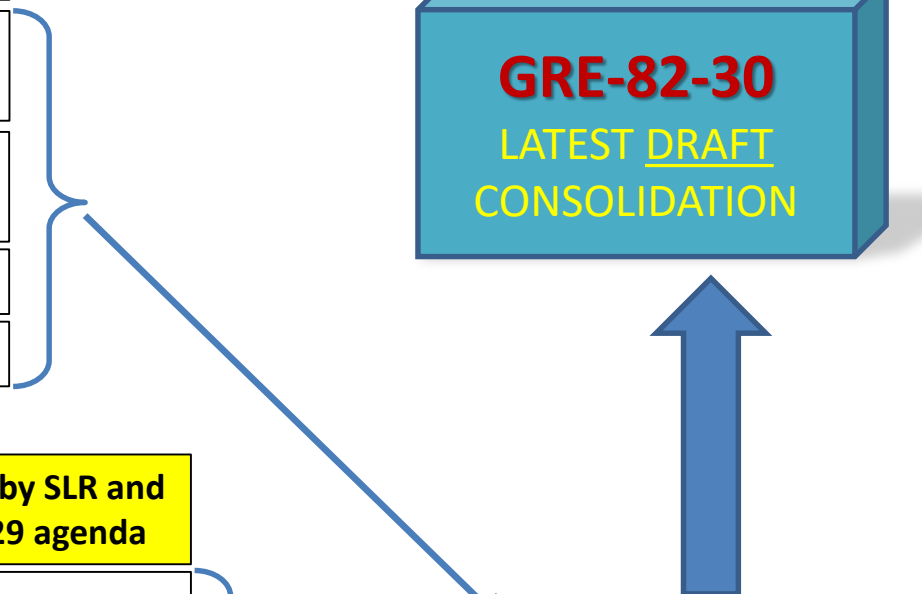
Main progress made

TOPIC	Proposals within SLR
Rearrangement of requirements	SLR-32-02/Rev.1
Error corrections	SLR-32-01/Rev.1
Max. intensities of DI	SLR-33-02
CoP	SLR-32-21/Rev.1

TOPIC	Proposals originated by SLR and now on GRE or WP.29 agenda
Error corrections Substitute light sources Low intensity DRL	WP29/2019/81 + GRE-82-05
Error corrections	GRE/2019/25
Sequential activation of DI for motorcycles and agricultural vehicles	GRE-82-27
Light source module marking	GRE-82-28

GRE-82-30
LATEST DRAFT
CONSOLIDATION

SLR-33-04/Rev.1



UN Regulation No. 149

**ROAD ILLUMINATION
DEVICES (RID)**

Stage II – Regulation No. 149

WP.29/2018/158/Rev.1

YESTERDAY

R112 Class A
Class B
Class AR
Class BR
R98 Class DC
Class DR
R123 Class C
Class E
Class V
Class W
Class XR
ADB
R113 Class AS
Class BS
Class CS
Class DS
Class ES
Class R-BS
Class R-CS
Class R-DS
Class R-ES
R19 Class B-F3
R119 Class K

6 Regulations
24 Beam patterns

TODAY (RID "Stage 1")

Class A
Class B
Class AR
Class BR
Class DC
Class DR
Class C
Class E
Class V
Class W
Class XR
ADB
Class AS
Class BS
Class CS
Class DS
Class ES
Class R-BS
Class R-CS
Class R-DS
Class R-ES
Class F3
Class K

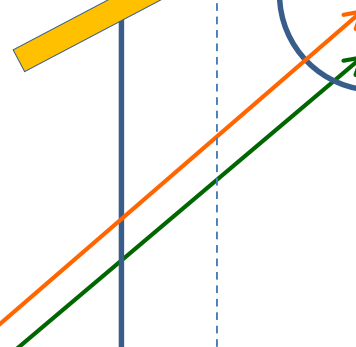
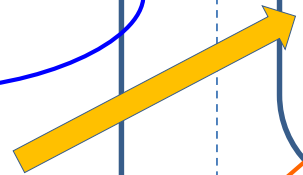
1 Regulation
23 Beam patterns

TOMORROW (RID "Stage 2")

Basic /"C" Passing beam
Low speed /"V" Passing beam
Motorway/"E" Passing beam
Adverse weather/"W" passing beam
Basic Driving beam
Low speed Driving beam
ADB
AS, BS for mopeds
CS, DS for motorbikes
Secondary driving beams (2 wheelers)
Auxiliary driving beam
Fog beam
Cornering beam

1 Regulation
16 Beam patterns

TC4-45 SAE J2829
Expertise of Optical engineers



Stage II – Regulation No. 149

Main progress made

TOPIC	MAIN IMPROVEMENTS	PARAGRAPHS MAINLY AFFECTED
Front Fog Lamp & Cornering Lamps	<ul style="list-style-type: none"> • Alignment of type approval and CoP requirements (FFL) • Increase of the minimum performance (CL) 	Par. 5.5 and 5.6.
Passing beams Symm. passing beam Driving beams	<ul style="list-style-type: none"> • Reduction of the number of beams • Improvement of performance requirements • Technology neutral • System approach 	Par. 5.2. and 5.3. Par. 5.4. Par. 5.1.
CoP	<ul style="list-style-type: none"> • Restructuring and streamlining of the requirements 	Par. 3.5., 6., 7. + A4, A5
Annexes 5 and 6	<ul style="list-style-type: none"> • Visual adjustment requirements harmonised in Annex 5 • Instrumental aiming procedure in specific Annex 6 	Par. 5. + A5, A6
Light Sources	<ul style="list-style-type: none"> • Technology neutral • Reduced need for amendments • Suitable for future technology 	Par. 4.5., 4.6. + A15 (new)

Stage II – Regulation No. 149

Main progress made

Passing beams Symmetrical passing beam Driving beams	<ul style="list-style-type: none">• Reduction of the number of beams• Improvement of performance requirements• Technology neutral• System approach	Par. 5.2. and 5.3. Par. 5.4. Par. 5.1.
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Focus on performance and Technology neutral

- ▶ Same requirements for any light source category
- ▶ Performances are independent from the light source technology
- ▶ Same requirements for passing beam / AFS class C .

Similar glare values as currently in R123

Significant improvement for basic/ “C” passing beam

- ▶ Width of the light on the road +70% → 20 m instead of 11.6 m
- ▶ Illumination projected on the road +20% → 2,1 lux instead of 1,8 at 75m

Significant improvement for motorway/ “E” passing beam

- ▶ Width of the light on the road +70% → 20 m instead of 11.6 m
- ▶ Same illumination at 75m + Minimum requirement of 0,75 lux at 125m

Better coverage of the road surface in front of the vehicle



Stage II – Regulation No. 149

Main progress made

Light Sources	<ul style="list-style-type: none">• Technology neutral• Reduced need for amendments• Suitable for future technology	Par. 4.5., 4.6. + A15 (new)
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4.5. Light sources

4.5.1. Restrictions on light sources

The lamps shall only be equipped with UN approved **replaceable** light source(s), provided that no restriction on the use is made at the time of application for type approval, and/or light source module(s), and/or non-replaceable light source(s).

[Where more than one light source is used to provide a beam, the correlated colour temperatures ...]

Additional light sources may be used inside the “passing beam headlamp” to contribute to bend lighting ...

Where more than one light source is used to provide the driving beam, these light sources shall be ...

4.5.2. General requirements for light sources (e.g. fixation, 2000lm limit, ...)

4.5.3. Specific requirements for light sources (e.g. minimum source flux, ...)

4.6. Testing of the lamp with respect to light sources

~~Depending on the light source used, the following conditions shall apply.~~

Tests shall be carried out according to Annex 15.

4.7. Testing of light transmitting components ...

4.8. Testing of cut-off ...

4.9. Tests for stability of photometric performance ...

Text of 4.5.1. reduces significantly

All testing details under 4.6. moved to Annex 15.

See SLR-32-06/Rev.1

Stage II – Regulation No. 149

Main progress made

Light Sources	<ul style="list-style-type: none">• Technology neutral• Reduced need for amendments• Suitable for future technology	Par. 4.5., 4.6. + A15 (new)
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NEW Annex 15 - Testing procedures [with respect to light sources]

In case of filament [incandescence] technology

- A lamp (function) is deemed to comply with the corresponding minimum and maximum intensity requirements at all points in time, if the values measured after photometric stability are compliant.

In case of gas-discharge technology

- A lamp (function) is deemed to comply with the corresponding minimum and maximum intensity requirements at all points in time, if the values according to Table x of this Annex and the values measured after photometric stability are compliant.

In case of LED technology

- A lamp (function) is deemed to comply with the corresponding minimum and maximum intensity requirements at all points in time, if the values measured at [1] minute after activation and after photometric stability are compliant.

In case of any other technology or in case of doubts

- The corresponding minimum and maximum intensity requirements of a lamp (function) are tested and checked for compliance at all points in time starting at the corresponding point in time listed in Table x of this Annex and ending when photometric stability is reached.

Stage II – Regulation No. 149

Main progress made

TOPIC	Proposals within SLR
Front Fog Lamp & Cornering Lamps	SLR-32-13/Rev.1
Passing beams Symmetrical passing beam Driving beams	SLR-32-14 SLR-32-15 SLR-32-16 SLR-33-11 (Justification)
CoP	SLR-31-05/Rev.1
Annexes 5 and 6	SLR-32-21/Rev.1 (CoP) SLR-30-15/Rev.1 (A5 & A6)
Light Sources	SLR-32-07/Rev.2

TOPIC	Proposal from TF-SR
LED substitute	GRE/2019/19



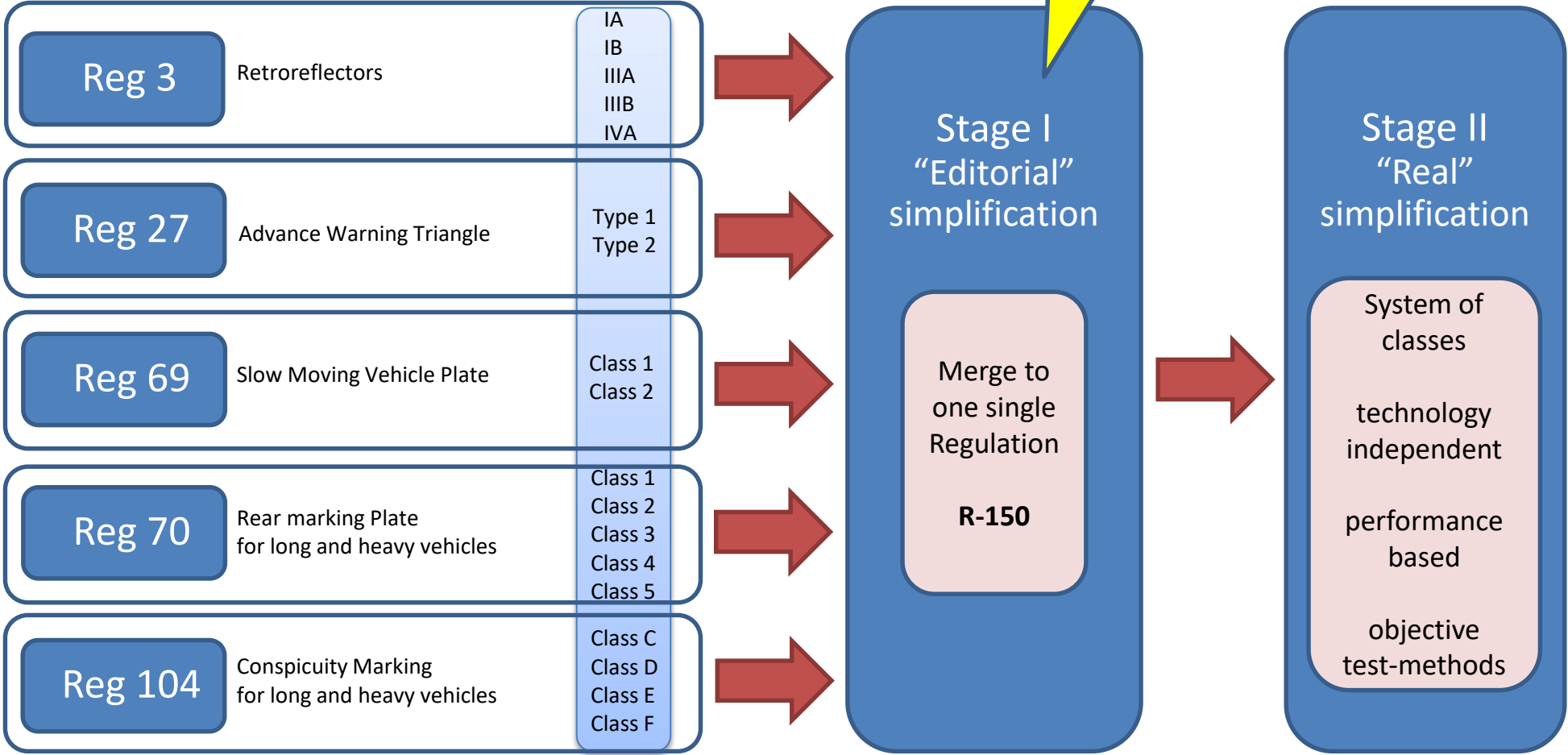
TOPIC	Proposals originated by SLR and now on GRE or WP.29 agenda
Improve and clarify (Par. 2.1. and Annex 2) Error corrections (Table 8 and 13) Error corrections (Reintroduce the run-up provisions for HID)	WP29/2019/82 WP29/2019/125 (=GRE-82-02) GRE/2019/24

UN Regulation No. 150

RETRO REFLECTIVE DEVICES (RRD)

Stage II – Regulation No. 150

WP.29/2018/159/Rev.1



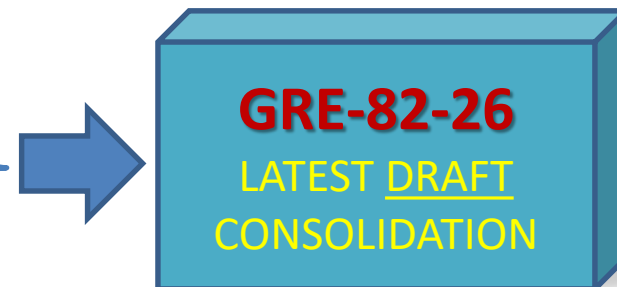
Stage II – Regulation No. 150

Main progress made

TOPIC	MAIN IMPROVEMENTS	PARAGRAPHS MAINLY AFFECTED
Merging of requirements and tables	<ul style="list-style-type: none"> Restructuring and streamlining of the requirements Significant reduction of pages by avoid repetition of text 	<ul style="list-style-type: none"> Par. 5.1. to 5.3. merged into (new) 5.1., which derives from R3 Par. 5.4. to 5.8. merged into (new) 5.2., which derives from R69, R70, R104 Par. 5.9. is now 5.3. (new), which is a stand-alone from R27

TOPIC	Proposals originated by SLR and now on GRE or WP.29 agenda
Error corrections	WP29/2019/83
Error corrections	GRE/2019/26

TOPIC	Proposals within SLR
Merging of requirements and tables	SLR-33-14



UN Regulation No. 48

HEADLAMP LEVELLING

Revised proposal

Headlamp Levelling

Excerpt of the official GRE Report on the 81st session - ECE/TRANS/WP.29/GRE/81

10. The expert from IWG SLR presented a proposal for a new 07 series of amendments to UN Regulation No. 48 (ECE/TRANS/WP.29/GRE/2019/3). The expert from Poland commented on the proposal (GRE-81-13 and GRE-81-16). GRE focused its discussion on the aiming diagram in paragraph 6.2.6.1.2. Following an in-depth consideration, **GRE agreed on a modified diagram (GRE-81-21 and Annex II) and requested IWG SLR to prepare, on the basis of the new diagram, a revised proposal for consideration at the next session.** The experts from Germany and Poland made study reservations. The expert from Germany also pointed out that, at the next session, he would present the outcome of a research project on the issue.



Informal document **GRE-82-25**
82nd GRE, 22-25 October 2019
Agenda item 6 (b)