Simplification of the UN Lighting and Light-signalling Regulations

Progress report on the Stage 2 and request for advice to GRE
Workload and meeting pace

29 meetings held until now:

I. 11 September 2014 in Brussels (BE)
II. 23 October 2014 in Geneva (CH)
III. 14 January 2015 in Brussels (BE)
IV. 13 April 2015 in Geneva (CH)
V. 13 October 2015 in Brussels (BE)
VI. 5-6 November 2015 in Brussels (BE)
VII. 15-16 December 2015 in Brussels (BE)
VIII. 13-14 January 2016 in Brussels (BE)
IX. 29 February & 1 March 2016 in Brussels (BE)
X. 14-15 April 2016 in Brussels (BE)
XI. 9-10 June 2016 in Brussels (BE)
XII. 5-7 September 2016 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)
XXII. 29 Jan / 1 Feb 2018 in Shenzhen (CN)
XXIII. 4-6 April 2018 in Brussels (BE)
XXIV. 30 May / 1 June 2018 in Brussels (BE)
XXV. 3-5 July 2018 in Brussels (BE)
XXVI. 24-26 September 2018 in Brussels (BE)
XXVII. 10-12 December 2018 in Brussels (BE)
XXVIII. 25-27 February 2019 in Brussels (BE)
XXIX. 27-29 March 2019 in Brussels (BE)

Next meetings:
SLR-30 on 22-24 May 2019 in Brussels (BE)
SLR-31 on 3-5 July 2019 in Brussels (BE)
SLR-32 on 3-5 September 2019 in Tokyo (JP)
SLR-33 on 9-11 October 2019 in Brussels (BE)
SLR-34 on 4-6 November 2019 in Brussels (BE)
SLR-35 on 11-13 December 2019 in Brussels (BE)
SLR “Stage 1”
The complete package adopted by WP.29 in March 2019

NEW SIMPLIFIED UN REGULATIONS

Transitional Provisions

Updated References to device Regs. + Reorganized and grouped definitions + Use of “Change Index” and its definition
- R48, series 03, 04, 05 and 06 of amendments
  (WP.29/2018/102, ./101, ./100/Rev.1, ./099/Rev.2)
- R53, series 01 and 02 of amendments
  (WP.29/2018/105 + WP29-177-07, ./104/Rev.1 + GRE-80-05 to Nov 2019)
- R74, series 01 of amendments
  (WP.29/2018/108/Rev.2)
- R86, series 00 and 01 of amendments
  (WP.29/2018/111, ./110/Rev.1)
### Work plan and time schedule for “Stage 2”

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

<table>
<thead>
<tr>
<th>STAGE 2</th>
<th>The overarching objective is to update and harmonize the technical requirements for lighting and light-signalling to be <strong>suitable for global implementation under the 1958 and 1998 Agreements.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STAGE 2 STEP 1</strong></td>
<td><strong>Revise the technical requirements of the new LSD, RID and RRD UN Regulations,</strong> 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.</td>
</tr>
<tr>
<td></td>
<td><strong>Informal submission to the eighty-second session of GRE</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Final consideration at the eighty-third session of GRE</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Adoption by WP.29</strong></td>
</tr>
<tr>
<td><strong>STAGE 2 STEP 2</strong></td>
<td><strong>Simplify and update the technical requirements of the UN installation Regulations (Nos. 48, 53, 74, 86),</strong> to become technology neutral with performance-based and objective test requirements</td>
</tr>
<tr>
<td></td>
<td><strong>Informal submission to the eighty-sixth session of GRE</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Final consideration at the eighty-seventh session of GRE</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Adoption by WP.29</strong></td>
</tr>
</tbody>
</table>
LIGHT SIGNALLING DEVICES (LSD)
Stage II – Regulation No. [LSD]

SIMPLIFICATION

Technology independent
Objective test-methods
Performance based
Stage II – Regulation No. [LSD]
Main topics of work

- Rearrangement of the requirements   -> §5.x.x
- Align „D“ and „Y“ lamp provisions   -> §4.4
- Light source module definition      -> §4.3.2.ff
- Harmonise failure provisions        -> §4.6. (see also §5.4.4.ff)
- Rear registration plate lamp – harmonisation -> §5.11.
- Reversing lamp – improvement         -> §5.8.
- Rear fog lamp – improvement          -> §5.9.
- Additional functions                -> New §x.y.
- Move requirements to main text       -> Annex 2,3
Stage II – Regulation No. [LSD]
Re-arrangement of the specific technical provisions in Par. 5

Existing provisions for each function in Regulation No. [LSD]

<table>
<thead>
<tr>
<th>Par. 5.x.</th>
<th>Content</th>
<th>5.1.</th>
<th>5.2.</th>
<th>5.3.</th>
<th>5.4.</th>
<th>5.5.</th>
<th>5.6.</th>
<th>5.7.</th>
<th>5.8.</th>
<th>5.9.</th>
<th>5.10.</th>
<th>5.11.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.x.</td>
<td></td>
<td>Front position, front end.</td>
<td>Rear position, rear end.</td>
<td>Parking</td>
<td>Daytime running</td>
<td>Stop</td>
<td>Direction indicator</td>
<td>Side marker</td>
<td>Reversing</td>
<td>Rear fog</td>
<td>Manoeuvring</td>
<td>Rear registration</td>
</tr>
<tr>
<td>5.x.1.</td>
<td>Intensity shall meet table x + table x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>5.x.2.</td>
<td>Table of photometry</td>
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<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5.x.3.</td>
<td>Colour</td>
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<td>✓</td>
<td>✓</td>
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<td>✓</td>
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<tr>
<td>5.x.4.</td>
<td>Outside table</td>
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<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>5.x.5.</td>
<td>Area of apparent surface</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>✓</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
</tr>
<tr>
<td>5.x.6.</td>
<td>Measuring procedure</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>✓</td>
<td>n.a.</td>
<td>✓</td>
</tr>
<tr>
<td>5.x.7.</td>
<td>Other requirements</td>
<td>n.a.</td>
<td>n.a.</td>
<td>n.a.</td>
<td>✓</td>
<td>n.a.</td>
<td>✓</td>
<td>n.a.</td>
<td>n.a.</td>
<td>✓</td>
<td>n.a.</td>
<td>✓</td>
</tr>
</tbody>
</table>

Proposal: New structure for Paragraph 5.x. including a fixed framework and empty requirements if no provision exists.

5.x. Name(s) and Symbol(s)
5.x.1. Luminous intensity:
5.x.2. Standard light distribution:
5.x.3. Colour:
5.x.4. Apparent surface:
5.x.5. Measurement:
5.x.6. Other requirements:

If necessary, add subparagraphs

See SLR-29-04-Rev.1 for further details
ROAD ILLUMINATION DEVICES (RID)
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

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

TOMORROW (RID “Stage 2”)

Basic /”C” Passing beam
Low speed /”V” Passing beam
Motorway/”E” Passing beam
Adverse weather passing beam
Basic Driving beam
Low speed Driving beam
ADB
AS, BS for mopeds
CS DS for motorbikes (>< 11 kW /125 cm³)
Secondary driving beams (>< 11 kW /125 cm³)
Auxiliary driving beam
Fog beam
Cornering beam

WP.29/2018/158/Rev.1

TC4-45 SAE J2829 Expertise of Optical engineers

6 Regulations
24 Beam patterns

1 Regulation
16 Beam patterns

1 Regulation
23 Beam patterns
Installation requirements after SLR step 1  Regulation RID

GREEN colour means «optional»
BLACK colour means «mandatory»

Should the beam requirements be based on the category of the vehicle?
RETRO REFLECTIVE DEVICES (RRD)
Stage II – Regulation No. [RRD]

- **Reg 3**: Retroreflectors
  - IA
  - IB
  - IIIA
  - IIIB
  - IVA

- **Reg 27**: Advance Warning Triangle
  - Type 1
  - Type 2

- **Reg 69**: Slow Moving Vehicle Plate
  - Class 1
  - Class 2

- **Reg 70**: Rear marking Plate for long and heavy vehicles
  - Class 1
  - Class 2
  - Class 3
  - Class 4
  - Class 5

- **Reg 104**: Conspicuity Marking for long and heavy vehicles
  - Class C
  - Class D
  - Class E
  - Class F

Stage I

RRD

Stage II

All existing Regs to merge to one single document

Extraction Analyse

WP.29/2018/159/Rev.1
Stage II – Regulation No. [RRD]
Main topics to be worked on in future

- Requirements for CIL for retroreflective devices – classes
- Requirements for $R'(R_A)$ for retroreflective devices/markings – classes
- Colorimetric requirements – daytime and nighttime visibility, enhanced visibility
- Photometric measurement conditions – to define independent from device
- Water-penetration test and corrosion test independent from the device
- Weathering test (colour fasness) to adapt to state of the art testing
- Mechanical requirements to define testing independent from device
- Chemical and environmental requirements - testing independent from device
- Specific requirements and testing, which is depending from the device
GRE advice needed (1/3)

Is it OK to continue having the headlamp provisions expressed on the basis of luminous intensities equivalent to illuminance measured on screen at a distance of 25m?
GRE advice needed  (2/3)

Items about Light Sources:

- SLR is considering to allow all (including the not yet known) technologies for all functions
- Should the combination of different Light Source technologies be possible for all functions?
- SLR is considering to separate the test procedures from the requirements and to move them to a new Annex called “Testing procedures”
GRE advice needed  (3/3)

Impact/usage of the Unique Identifier in LSD/RID/RRD:

- Accessibility via DETA
- What markings and symbols will actually be replaced by the UI?
- Should some of the existing additional markings and symbols be maintained also with the UI?