Overview of the work of GRE IWG-SLR

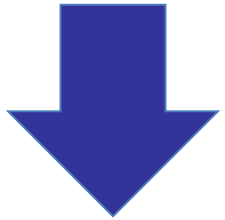
Summary on the Stage 1 and the plan for Stage 2

DVN Workshop
15-16 January 2019
ROYAL PARK HOTEL, ROCHESTER, MI

Davide PUGLISI
GTB Secretary-General
GRE IWG-SLR Secretary

Why simplification ??

Too many UN Regulations amended too frequently because not technology neutral



Excessive administrative burden

(cost for translations, difficult handling of many proposals, collective amendments, high risk of introducing errors, etc.)

Lack of legal certainty

Need to remove barriers to innovation

GRE Informal Working Group on the SIMPLIFICATION of UN Lighting and Light Signalling Regulations (SLR)

GTB provides the Secretariat

Option chosen by the GRE-IWG SLR

Develop 3 new UN Regulations:

- Light Signalling Devices (LSD)
- Road Illumination Devices (RID)
- Retro-Reflective Devices (RRD)

Containing classes of devices (e.g. Direction Indicators, position lamps, reversing lamps, Rear foglamps, etc.)

Quickest route to deliver a solution for the administrative problem of collective amendments.

Continue to grant new type approvals to the existing Regulations during development of the new Regulations.

Simplification to be delivered in two stages

STAGE 1
"Editorial simplification"

REDUCE 41 UN REGULATIONS TO 14 REGULATIONS + 1 RESOLUTION

- **Provide a structure that limits to a minimum the number of parallel amendments** necessary to achieve a regulatory change
- **Reduce the number of active/non-frozen regulations**
- **Reduce the administrative burden (caused by maintenance of Regulations)** on the Contracting Parties, the UNECE secretariat (and associated UN services) and the affected industrial sector

STAGE 2
"Performance based / Technology neutral"

REWRITE THE NEW REGULATIONS WITH UPDATED PERFORMANCE BASED TECHNICAL REQUIREMENTS SUITABLE FOR THE FUTURE

- Reduce ambiguity in the provisions to provide **consistent interpretation**
- Define the essential requirements in **performance (technology neutral) terms to provide opportunities for innovation**
- Determine whether the current regulatory text presents **barriers to innovation** and whether **safety considerations** are addressed
- Develop, as far as possible, **performance-based and technology-neutral requirements to ensure freedom for technical innovation within a framework of safety principles**

Structure of UN lighting Regulations after Stage 1

UN Regs

1
2
3
4
5
6
7
8
19
20
23
27
31
38
50
56
57
69
70
72
76
77
80
87
91
98
104
112
113
119
123

NEW REGULATIONS

New 1 “Light Signalling Devices”
New 2 “Road Illumination Devices”
New 3 “Retro-Reflective Devices”

INSTALLATION

R-48, R-53, R-74, R-86

LIGHT SOURCES

R-37, R-99, R-128
(Simplified structure with reference to a Resolution, R.E.5)

VARIOUS

R-10, R-45, R-65, R-88

ONLY
14 Live Regulations

GRE Regulations after Stage 1 of simplification

UN Regulations Nos. 4, 6, 7, 23, 38, 50, 77, 87 and 91 merged into **only 56 pages of text!**

R4	R38	
R6	R77	
R7	R87	
R23	R91	
R50		

9

R xxx (NEW 1) Light Signalling Devices

R19	R119	
R98	R123	
R112 (R1), (R8), (R20)	R113 (R56), (R57), (R72), (R76), (R82)	

6

R xxx (NEW 2) Road Illumination Devices

R3	R70
R69	R104
R27	

5

R xxx (NEW 3) Retro-Reflective Devices

R37, (R2), R99, R128, Resolution → Already adopted by GRE-75

(R5),	R48*,	R10,
(R31),	R53*,	R45,
	R74*,	R65,
	R86*,	R88,

8

NOT ON SLR AGENDA FOR STAGE 1

* Definitions and other editorial adjustments / synchronisation will be addressed

Regulations in parenthesis are frozen already.

Work plan and time schedule for “Stage 1”

STAGE 1	The objective was to update and freeze the existing device Regulations and produce three new UN Regulations (for road illumination (RID), light-signalling (LSD) and retro-reflecting devices RRD)) based on the text of existing UN Regulations. This was primarily an editorial task to leave the prescriptions of the various Regulations unchanged, other than where the objectives of simplification and consolidation so required.	
	Completion at GRE 80	**October 2018**
	Final adoption by WP.29 of the new LSD, RID and RRD Regulations and the associated package of amendments to existing Regulations	**November 2018**

Postponed to March 2019…

SLR "Stage 1"
The complete package for March 2019

NEW SIMPLIFIED UN REGULATIONS

- Light Signalling Devices (LSD) → WP.29/2018/157 (*GRE/2018/36 to Nov 2019*)
- Road Illumination Devices (RID) → WP.29/2018/158**/Rev.1** (*part of GRE/2018/37 to Nov 2019*)
- Retro-Reflective Devices (RRD) → WP.29/2018/159**/Rev.1** (*part of GRE/2018/38 to Nov 2019*)

Transitional Provisions

Collective Amendments for Regs Nos. 3, 4, 6, 7, 19, 23, 27, 38, 50, 69, 70, 77, 87, 91, 98, 104, 112, 113, 119 and 123
WP.29/2018/091**/Rev.1** to …/098**/Rev.1**, …/103**/Rev.1**, …/106**/Rev.1**, …/107**/Rev.1**, …/109**/Rev.1**, …/112**/Rev.1** to …/119**/Rev.1**

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, …/099/**Rev.1**)
- R53, series 01 and 02 of amendments
  (WP.29/2018/105, …/104/**Rev.1** + GRE/2018/35 as corrected by GRE-80-05)
- R74, series 01 of amendments
  (WP.29/2018/108/**Rev.1**)
- 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

STAGE 2	The overarching objective is to update and harmonize the technical requirements for lighting and light-signalling to be suitable for global implementation under the 1958 and 1998 Agreements.	
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**
	Adoption by WP.29	**November 2020**
STAGE 2 **STEP 2**	**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**

STAGE 2 = SIMPLIFIED REGULATIONS

with technology neutral and performance based requirements

STEP 1

What realistically
can be achieved by the end of 2019

→

Improve the simplified UN **device Regulations** resulting from Stage 1 (i.e. LSD, RID and RRD) with regards to:

- technology neutral
- performance based requirements
- objectively testable provisions

Align all changes with the progress of the corresponding simplified Chinese GB Standards

Minor amendments to installation will be necessary

STEP 2

What will be delivered afterwards (not because less important but because requiring more time!)

→

Simplify UN **installation Regulations** (48, 53, 74, 86) and harmonise with corresponding Chinese GB Standards.

CHINESE SIMPLIFICATION OF GB STANDARDS

- **GB 4599-2007 汽车用灯丝灯泡前照灯**
  Headlamp with filament lamps
- **GB 21259-2007 汽车用气体放电光源前照灯**
  Headlamp with gas-discharge light sources
- **GB 25991-2010 汽车用LED前照灯**
  Headlamp with LED/LED module(s)
- **GB 4660-2016 机动车用前雾灯配光性能**
  Front fog lamps

+

- **GB/T 30036-2013 汽车用自适应前照明系统**
  Adaptive Front-Lighting System for Motor Vehicle
- **GB/T 30511-2014 汽车用角灯配光性能**
  Cornering lamps

FRONT LIGHTING

SIGNAL LIGHTING

标准号NO.	标准名称Name	UN ECE
GB 5920-XXXX	汽车及挂车前位灯、后位灯、示廓灯和制动灯配光性能	R7
GB 15235-2007	汽车及挂车倒车灯配光性能	R23
GB 11554-2008	机动车和挂车用后雾灯配光性能	R38
GB 17509-2008	汽车及挂车转向信号灯配光性能	R6
GB 18408-2015	汽车及挂车后牌照板照明装置配光性能	R4
GB 18409-2013	汽车驻车灯配光性能	R77
GB 18099-2013	机动车及挂车侧标志灯配光性能	R91
GB 23255-XXXX	汽车昼间行驶灯配光性能	R87
GB 13594-2009	特种车辆标志灯	----

GB 11564-2008 机动车回复反射器 （对应于 ECE R3）

"Retro reflector device for motor vehicles"

GB 19151-2003 机动车用三角警告牌 （对应于ECE R27）

"Warning triangles for motor vehicle"

GB 23254-2009 货车及挂车 车身反光标识 （技术内容类似ECE R104）

"Retro-reflective markings for trucks and trailers"

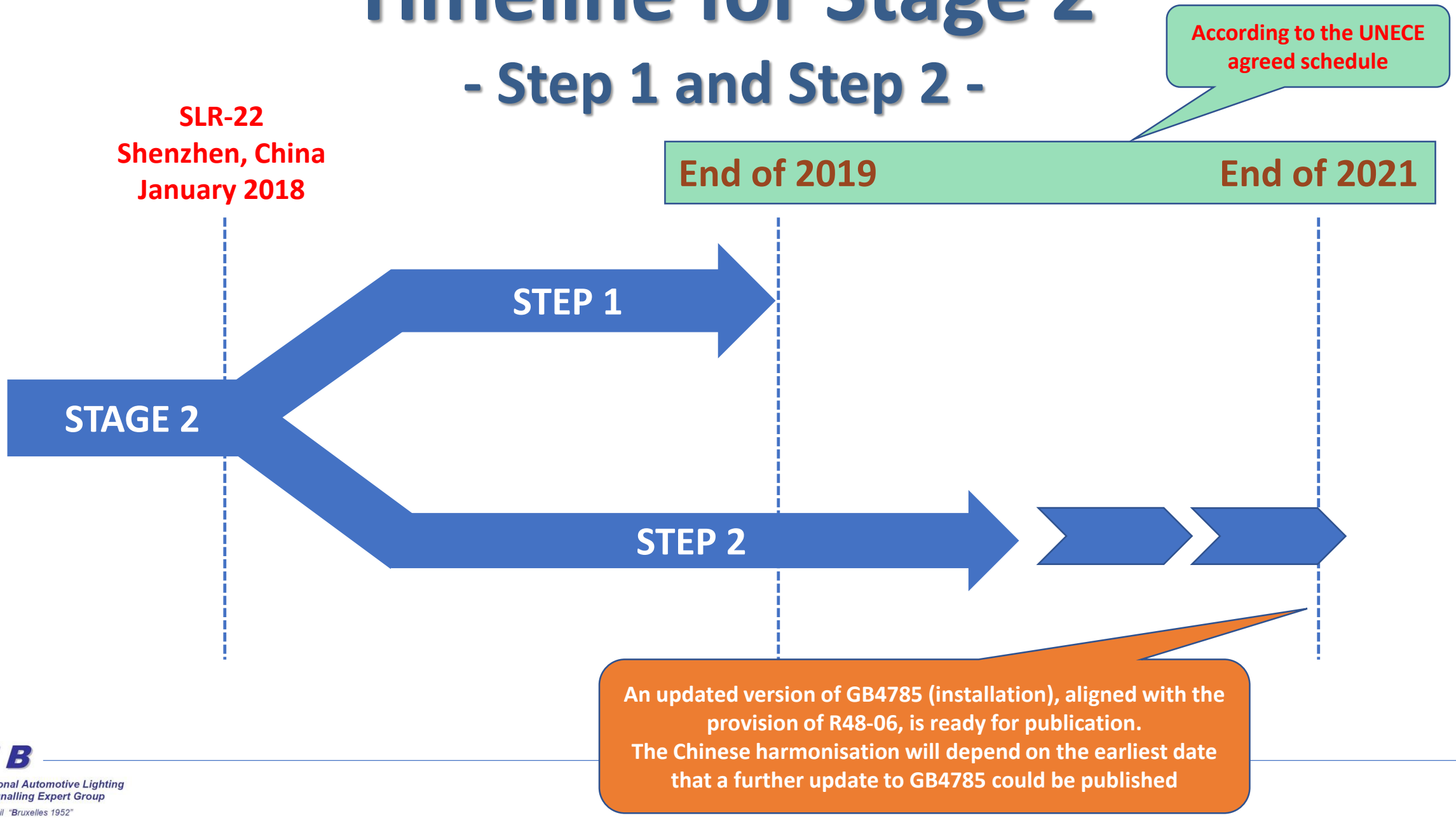
GB 25990-2010 车辆尾部标志板 （对应于ECE R69和ECE R70）

"Rear-marking plates for vehicles and their trailers"

RETRO-REFLECTIVE DEVICES

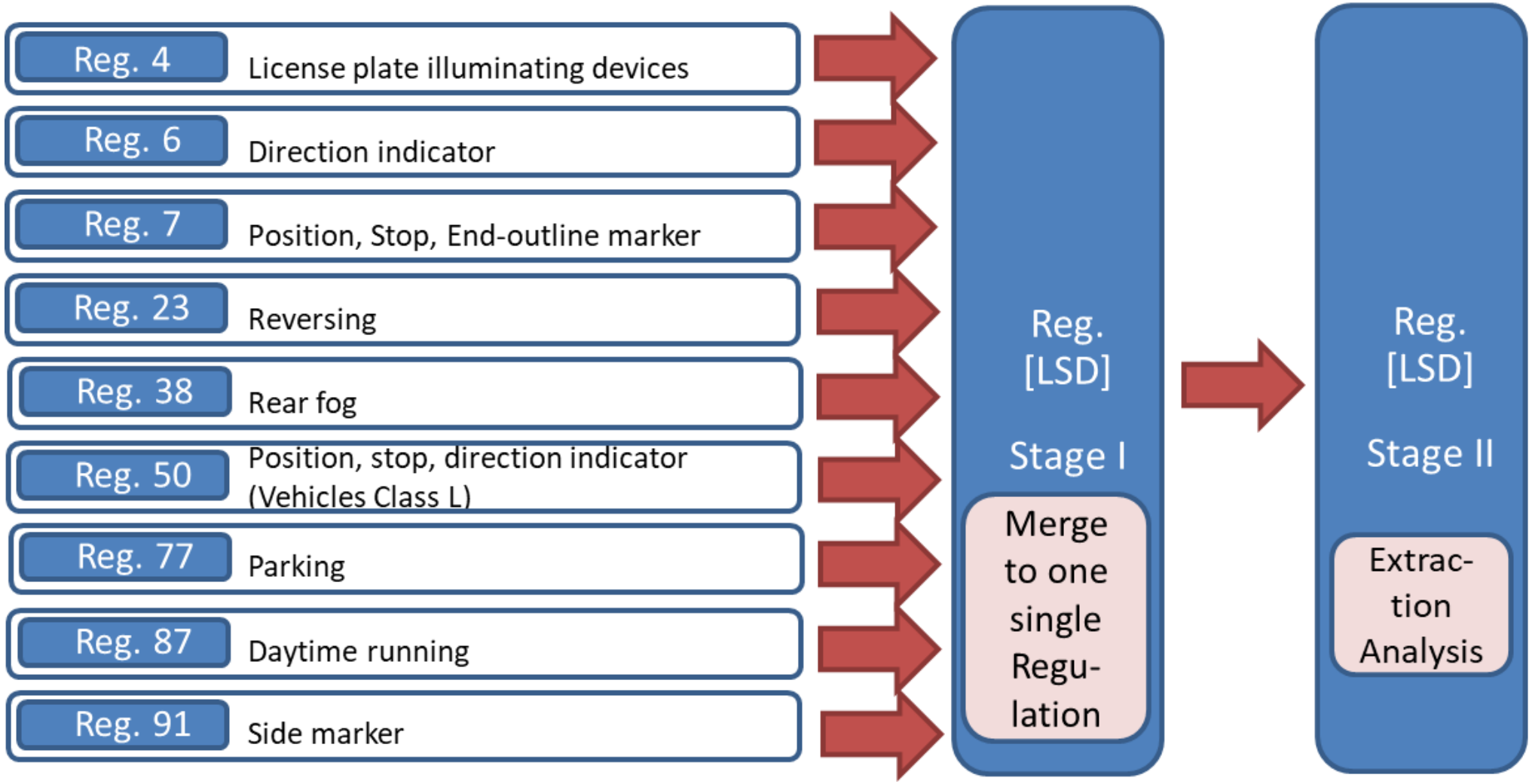
Timeline for Stage 2

- Step 1 and Step 2 -



LIGHT SIGNALLING DEVICES (LSD)

Stage II – Regulation No. [LSD]



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

ROAD ILLUMINATION DEVICES (RID)

TODAY

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

TOMORROW (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

IN FUTURE (RID "Stage 2")

Basic /"C" Passing beam
Low speed /"V" Passing beam
Motorway/"E" Passing beam
Basic Driving beam
Low speed Driving beam
ADB
AS BS for mopeds
CS DS for motorbikes (11 kW 125 cm^3)
Fog beam
Cornering beam

1 regulation
12 ? Beam patterns

TC4-45 SAE J2829
Expertise of Optical engineers

Installation requirements after SLR step 1 Regulation RID

Class B, BR
Class DC, DR
Class C
Class E
Class V
Class W
Class XR
ADB
Class F3
Class K

R48

Class A, AR
Class B, BR
Class DC, DR
Class AS
Class BS, R-BS
Class CS, R-CS
Class DS, R-DS
Class ES, R-ES
Class F3
Class K

R86

R74

< 50 Km / h

AS
BS, R-BS
CS, R-CS
DS, R-DS
ES, R-ES
A, AR
B, BR

R53

<125 cm^3

CS, R-CS
DS, R-DS
ES, R-ES
Class B, BR
Class DC, DR
F3

>125 cm^3

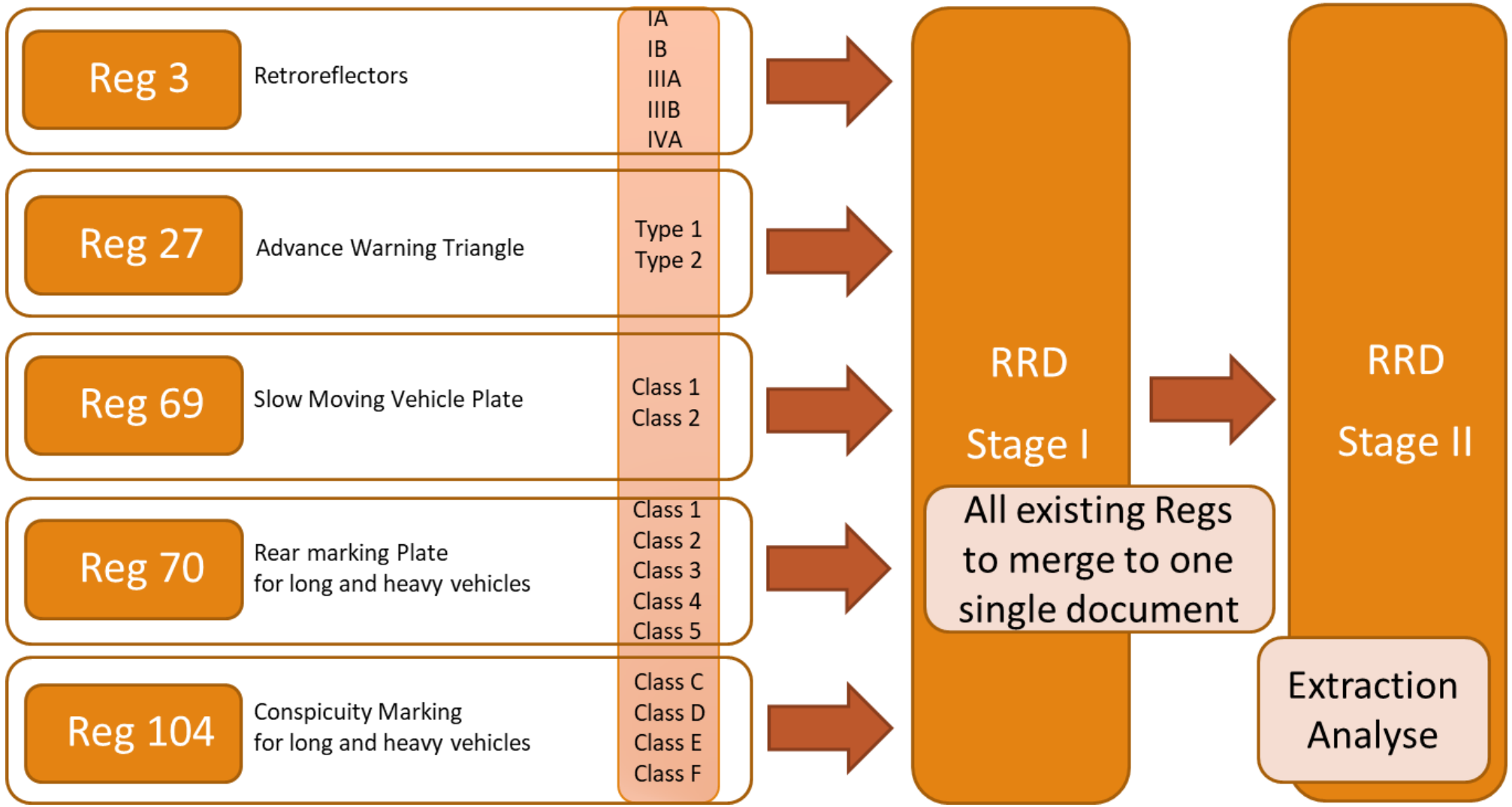
2 x CS, 2 x R-CS
DS, R-DS
ES, R-ES
A, AR
B, BR
DC, DR
F3

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]

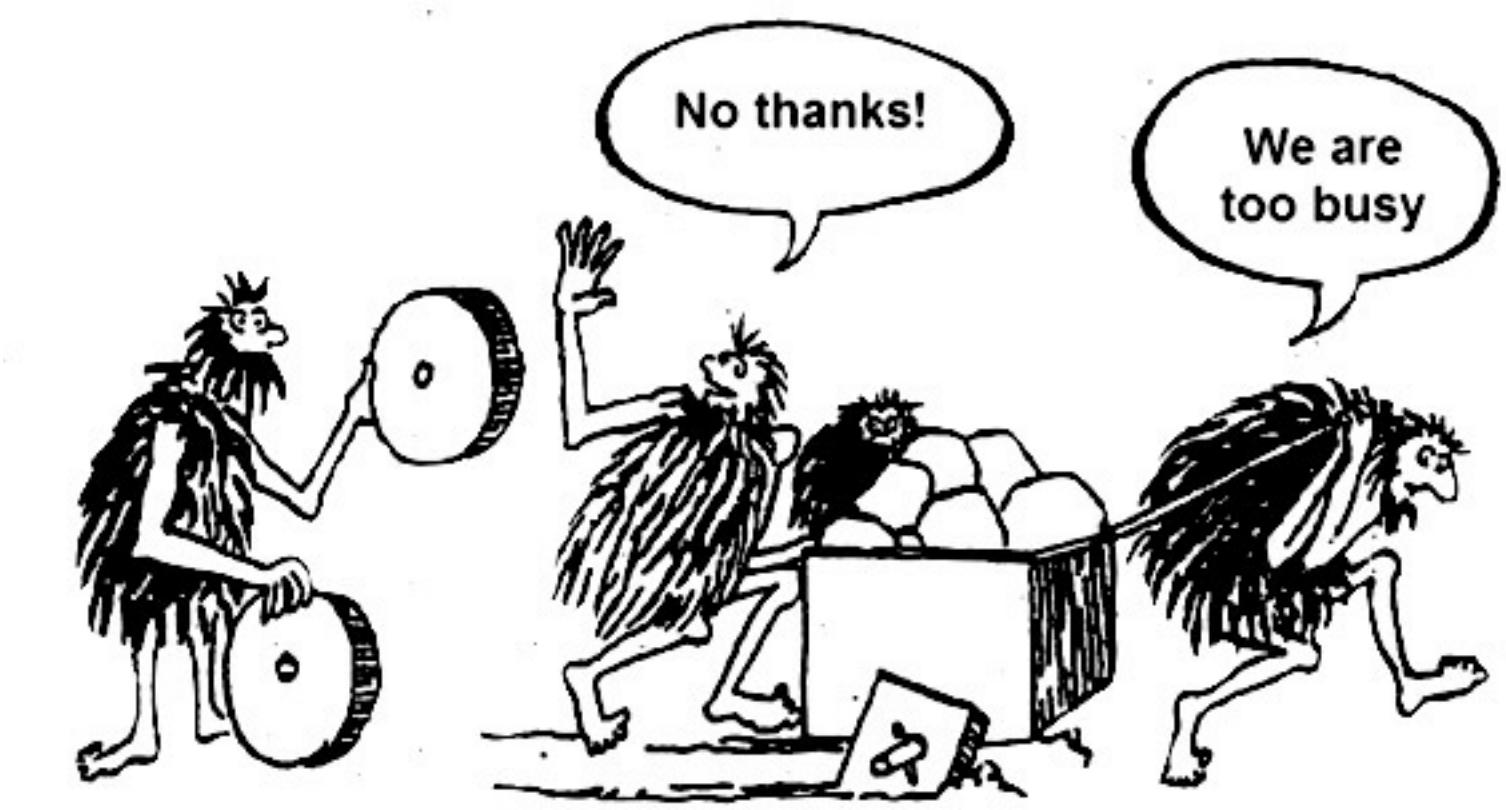


Stage II – Regulation No. [RRD]
Main topics of work

- 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 independend from the device
- Weathering test (colour fasness) to adapt to state of the art testing
- Mechanical requirements to define testing independend from device
- Chemical and environmental requirements - testing independend from device
- Specific requirements and testing, which is depending from the device

Conclusions

This approach is complicated but will overcome the problem of collective amendments and provide GRE and WP29 with an **excellent basis for introduction of new technologies** into the UN Regulations with a **minimum of administrative burden**



Thank you for your attention!

Davide PUGLISI

Secretary of the GRE Informal WG

on the Simplification of the

UN Lighting and Light Signalling

Regulations (SLR)

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https://www2.unece.org/wiki/pages/viewpage.action?pageId=23759699