

# **Draft outcome of 3<sup>rd</sup> session of the IWG VGL**

July 18,19. 2016 in Paris

# Introduction

During 3<sup>rd</sup> meeting there were explained and analysed two technical proposals for amendment to Regulation No 48:

- OICA/GTB - doc. GRE 2015/5 (&GRE-73-06)
- Polish - doc. GRE-73-18 Corr.1 (&GRE -73-28)

# Similar

Both proposals concerns conditions for cut-off levelling tolerances for vehicle load change in dependence on headlamp mounting height (tolerances box).

Both propose also loading conditions and discriminate when can be used:

- No levelling device
- Manual levelling device
- Automatic levelling device

# Starting point - GTB/OICA proposal

Based on some examples of **real headlamps** and **passenger cars**:

- **TC-4-45** results of road illumination for **small number** of rather **good performing** real headlamps mounted on real **cars**. Different beam patterns, different mounting heights.
- **Klettwitz** tests were done on straight flat road with real different passenger cars and real different headlamp (Halogen, HID, LED). Cars were loaded according arbitrary defined **3 steps of load** (called „no”, 50% and 100%). Klettwitz test asses by questionnaire feelings of the glare level.
- M1 and some N vehicles only.
- Annex 5 - load condition as today.
- Multistep manual levelling device as today.
- Proposal for replacement of present 2000 lm criterion for automatic levelling

# Starting point - Polish proposal

Based on type approval „**worst case**“:

Minimum photometric requirements used in **present component Regulations** (112, 98, 123) as the base.

- Road illumination by nominal initial aim according present type approval requirements (0.75 m mounting height, 1% down cut-off inclination)
- Levelling adjusted to mounting height in such a way to provide **the same road illumination for each mounting height.**
- Difference between **highest and lowest** longitudinal vehicle axis inclination for any possible loading of vehicle as the base for kind of levelling device. Loading with step of 25 kg or 5% of full load.
- All kind of vehicles are included.
- Simple two-position manual levelling device is proposed.

# No consensus, polarized positions

Most of **industry representatives** are in favour of **GTB/OICA** proposal from point of view of easier design & manufacturing process:

- Easier requirements than today. Most typical cars meet GTB/OICA „50%” load criterion. It would be nearly no need to use automatic levelling.
- Varied cars versions (suspension design, engines etc. ) could use the same devices and settings despite of different road illumination.
- Not submitted test results or evidence confirming or denying possibility to meet Polish proposal.

# No consensus, polarized positions

Most of **Contracting Parties representatives** are in favour of **Polish proposal** from safety and clear justification point of view:

- The same minimum road illumination independently in mounting height – preferred minimum range of 50m. Lower aiming significantly impair quality of road illumination especially for headlamps of much better performance than minimum.
- Submitted test results (Polish only) shows that most of cars will not require automatic levelling.
- All kind of vehicle taken into account.

# Next steps

- More detailed information regarding GTB/OICA proposal needed including consequences of „50%” and „100%” load definition.
- **More results** of simple tests of extreme pitch change under load is expected. For **heavy truck** too. Also calculations and/or simulations for different vehicles are welcome.
- Both road illumination and glare should be taken into account.
- It is needed agreement regarding „box tolerances” firstly.
- Then loading conditions should be clearly explained and justified.
- Finally the proper criteria for use of the levelling device should be defined: automatic, manual or none.



Thank you for attention