Draft outcome of 3rd session of the IWG VGL

July 18,19. 2016 in Paris
Introduction

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

- OICA/GTB - doc. GRE 2015/5 (&GRE-73-06)

Both proposals concern 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
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%). Kletwittz 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