

## **DRAFT - PROPOSAL**

### **Draft Terms of Reference for the Informal Group “Informal Working Group on Visibility, Glare and Levelling (IWG on VGL)”**

#### **A) INTRODUCTION**

At its 65<sup>th</sup> session, GRE considered ECE/TRANS/WP.29/GRE/2011/27, introducing mandatory automatic levelling for headlamps (superseding ECE/TRANS/WP.29/GRE/2011/2 and ECE/TRANS/WP.29/GRE/2011/22). The proposal received comments from the experts of GTB (GRE-65-03 and GRE-65-17) and OICA (GRE-65-16) among others. Expert from Poland presented “Analysis of the influence of aiming, on visibility distance and glare” (GRE-65-30) concerning important aspects of present state of aiming/ levelling in Regulation no 48.

GRE adopted ECE/TRANS/WP.29/GRE/2011/27, as amended by Annex IV to this report. GRE agreed that this adoption was subject to the development of a further proposal to be prepared by the expert from GTB who would lead a comprehensive study of the whole issue of glare and visibility during night-time driving. Accordingly, it was agreed in case the results of the study revealed alternatives to the adopted mandatory requirements for automatic levelling and cleaning, the provisions of Regulation No. 48 would be re-examined at any time during the 90 months transitional period provided by ECE/TRANS/WP.29/GRE/2011/27. It was further agreed that, while the study would be managed by a dedicated working group based on the GTB structure, participation would be open to any GRE expert wishing to contribute. The secretariat was requested to submit ECE/TRANS/WP.29/GRE/2011/27 to WP.29 and AC.1 at their November 2011 sessions as draft [06] series of amendments to Regulation No. 48.

**See ECE/TRANS/WP.29/GRE/65, Agenda item 5(d), paragraph 17.**

At the 155<sup>th</sup> session of WP.29 under agenda item 4.6.5 (UN Regulation No. 48), the World Forum agreed to defer consideration of document ECE/TRANS/WP.29/2011/99 and Corr.1 to its June 2012 session, subject to a final review by GRE at its March 2012 session.

**See ECE/TRANS/WP.29/1093, Agenda item 4.6.5. paragraph 55.**

At the 156<sup>th</sup> session of WP.29, the World Forum agreed to defer consideration of the amendments to Regulations under agenda items 4.16.1 to 4.16.3 to the next session of WP.29.

**See ECE/TRANS/WP.29/1093, Agenda item 4.16.2. paragraph 79.**

At the 157<sup>th</sup> session of WP.29, the World Forum also agreed to refer back the documents of agenda item 4.14.2 to GRE for its further consideration. In this respect, the EU requested a cost/benefit analysis.

**See ECE/TRANS/WP.29/1097, Agenda item 4.14.2. paragraph 55.**

In conjunction with the further consideration in GRE, GTB (Groupe de Travail “Bruxelles 1952”) established a Task Force Coordination of Automotive Visibility and Glare Studies (TF CAVGS).

TF CAVGS is defined as: project management and Quality Control of activities by GTB working groups (SVP, FL, SL and I) in relation to Automotive Visibility and Glare studies; informal communication with GRE, OICA, and CLEPA through liaisons in this TF, optional collaboration with SAE and CIE through liaisons; communication via GTB CE to GRE and to a public accessible section on the GTB web site.

In the meantime the expert from Poland prepared for all consecutive GRE sessions formal and informal documents with proposals based on the basic analysis of photometry and geometry with explanations according GRE comments and suggestions (**ECE/TRANS/WP.29/GRE/2011/32** - initial Polish proposal for aiming/levelling tolerance connected with objective road illumination distance of 75m +/- 25 m, **GRE-66-17**, **ECE/TRANS/WP.29/GRE/2012/21**, **GRE-67-33**, **GRE-67-37**, **ECE/TRANS/WP.29/GRE/2012/27**, **GRE-68-31**, **GRE-68-32**, **GRE-68-34**, **ECE/TRANS/WP.29/GRE/2013/15**, **GRE-70-41**, **ECE/TRANS/WP.29/GRE/2013/57** and **ECE/TRANS/WP.29/GRE/2014/11** – coming back to values of initial Polish proposal). Polish proposals concentrated to guarantee the minimum range of illuminated road while ensuring the avoidance of glare regardless of the historical requirements oriented to the design.

During the 71<sup>st</sup> session of GRE, the experts from GTB presented the outcome of a study on visibility and glare of automotive low beam headlamps; see informal document GRE-71-32. The study concentrated on levelling in relation to load. The major objectives of the study were to improve the understanding of different factors that influence visibility and glare and to identify results of the study that might reveal alternatives for automatic static levelling.

According GRE suggestion it included studies done by Poland.

**See Informal document GRE-71-32**

The resulting proposal for Regulation 48 on the base of this study was presented to GRE 72 as the Informal document GRE-72-07

**See Informal document GRE-72-07**

At its 73<sup>rd</sup> session, GRE Agenda item 6 (b), GRE may wish to consider a joint proposal by the experts from the International Organization of Motor Vehicle Manufacturers (OICA) and GTB to introduce new criteria on the automatic levelling of headlamps based on the GTB glare and visibility studies. This proposal is for formal consideration by and advice from Contracting Parties, with the expectation that a finalized text will be submitted for adoption at the seventy-fourth session of GRE.

The result of the discussion is written in the Report of the 73<sup>rd</sup> session as follows:

## **6 (b).Other proposals for amendments to Regulation No. 48**

*Documentation:* ECE/TRANS/WP.29/GRE/2015/5,  
ECE/TRANS/WP.29/GRE/2015/6,  
ECE/TRANS/WP.29/GRE/2015/21,  
Informal documents GRE-73-12, GRE-73-17, GRE-73-18, GRE-73-19,  
GRE-73-25, GRE-73-27, GRE-73-28

17. The experts from OICA and GTB proposed to introduce new criteria on the automatic levelling of headlamps based on the outcome of the GTB glare and visibility studies (ECE/TRANS/WP.29/GRE/2015/5). The expert from Poland suggested further modifications to this proposal (**GRE-73-18 and 28**). The experts from Germany and Japan proposed to impose automatic levelling in all cases, in order to reduce glare problems for drivers (**GRE-73-17**). Following an in-depth exchange of views on these three documents, GRE realized that no consensus could be found as long as there was no single proposal.
18. To make progress on this issue and prepare a comprising proposal, GRE decided to establish an Informal Working Group with a draft title "on Visibility, Glare and Levelling" (IWG VGL), for which the experts from Germany and Poland agreed to act as Chair and Secretary, respectively. GRE requested IWG VGL to submit its terms of reference for consideration at the next session of GRE and mandated the Chair to obtain, in June 2015, the consent of WP.29 for the establishment of this IWG.

**See ECE/TRANS/WP.29/GRE/73, Agenda item 6(b), paragraphs 17 and 18.**

At the 166<sup>th</sup> session of WP.29, AC.2 considered the possibility of establishing an Informal Working Group (IWG) on Visibility, Glare and Levelling. Germany expressed its interest to chair the group, Poland to be Vice-Chair and OICA the secretary. WP.29 was requested to provide advice on this issue.

**See ECE/TRANS/WP.29/1116, paragraph 12.**

At the 166<sup>th</sup> session of WP.29, finally, WP.29 noted that, to prepare a consolidated proposal on new criteria for the automatic levelling of headlamps, GRE decided to establish a new **Informal Working Group on Visibility, Glare and Levelling (IWG on VGL)**. WP.29 gave its consent for establishing the IWG. (25)

**See ECE/TRANS/WP.29/1116, paragraph 25.**

And in the further discussion under Agenda item 4.2.3. "Design restrictive requirement in Regulation No. 48" see para's 50 and 51 in the Report:

50. The representative of France proposed to delete a design restrictive requirement in Regulation No. 48 for auto-levelling of headlamps equipped with any Light Emitting Diodes (LED) light sources (ECE/TRANS/WP.29/GRE/2015/21, ECE/TRANS/WP.29/GRE/73 and WP.29-166-23). The representative explained that, if LED were treated the same way as other light sources, more LED headlamps would be fitted on new vehicles, and thus improving road safety and reducing CO2 emissions. WP.29 noted that recent studies indicate that the type of light source does not seem to be a major factor of headlamp glare, and that GRE had established an IWG to review all levelling requirements in Regulation No. 48 (para. 25)

above). The EU representative stressed that also for this subject OLA should be involved to provide their analysis and preferred option.

51. WP.29 stressed that, in line with the text and spirit of the 1958 Agreement, Regulations should be technologically neutral and performance based. Therefore, WP.29 advocated the French proposal and invited GRE to adopt it and to submit it to WP.29 for consideration. WP.29 also pointed out the importance of the newly established IWG for finding a general solution for glare and visibility issues.

WP.29 also instructed IWG and GRE to verify, as a matter of priority, that LED headlamps do not produce more glare compared to other light sources, to review all levelling requirements and to report back to WP.29.

**See ECE/TRANS/WP.29/1116, paragraphs 50 and 51.**

**At its seventy-fourth session, GRE reverted to the proposal by the expert from France to delete a design restrictive requirement in Regulation No. 48 (ECE/TRANS/WP.29/GRE/2015/21), bearing in mind the guidance of WP.29 (ECE/TRANS/WP.29/1116, paras. 50 and 51). GRE... [to be completed by the secretariat based on the GRE-74 report]**

## **B) OBJECTIVES OF THE PROPOSAL**

1. The following Terms of Reference describe the principle tasks of the new IWG as it turns its focus to the development of a proposal of Regulation 48 consistent with the visibility and glare concerns.
2. The IWG on VGL shall:

### STEP 1:

To define technology neutral requirements as **instructed** by the WP29, **in particular to find a general solution for glare and visibility issues, and to review all levelling requirements.**

### STEP 2:

- a. Identify, review and assess the status of various researches being carried out by various governments, universities and non-governmental organizations on visibility and glare.
- b. Invite, consult with and consider the input of safety experts.
- c. Develop if necessary additional researches and studies related to visibility and glare issue
- d. Determine potential visibility and glare characteristics and mechanisms that convey desired vehicle performance information to the human.

In focussing:

- on the relevant general data (roads, environment/ecology, standard use of vehicles, future technologies, ...) explaining the different situations of glaring and the critically situations with regard to visibility;
  - on the relevant parameters for installation of head lamps with regard to visibility and glare, taking in account:
    - Aiming of the head lamps;
    - Levelling of the passing beam pattern;
    - Mounting height of the head lamps, with a clear definition of reference condition;
    - Ergonomic aspects shall be investigated
    - Washing
    - ...
- e. Develop test procedures for evaluating the conformity of visibility and glare characteristics and mechanisms. Define as good as possible the essential requirements in performance (technology neutral) terms to provide opportunities for innovation and to prepare acceptable transitional provisions
  - f. Develop a proposal of amendment of Regulation 48 accordingly and if needed headlamps beam pattern will have to be considered with necessary additional amendment to headlamps Regulations.
  - g. Determine the costs and benefits associated with this proposal of amendment of Regulation 48. Note that the analysis is not intended to address specific countries or regions, but rather general considerations each Contracting Party (to WP.29) should consider when implementing the potential proposal.
  - h. Provide a draft proposal to the GRE by [April 2017] and to the WP.29/AC.1 by [November 2017].

C) **RULES OF PROCEDURE**

1. The Informal Working Group on Visibility, Glare and Levelling (IWG on VGL) is a sub-group of GRE and is open to all participants of GRE including Contracting Parties and Non-Governmental Organisations to the 1958 and 1998 Agreements. However it is recommended that a maximum of three technical experts per country and organization participate in this group.
2. The IWG will be chaired by Germany and co-chaired by Poland. OICA will act as secretary.
3. The official language of the informal group will be English.
4. An agenda and related documents shall be made available on the dedicated UNECE website (<https://www2.unece.org/wiki/pages/viewpage.action?pageId=26903055> ) by the Secretary of the group in advance of all scheduled meetings.
5. All documents and/or proposals shall be submitted to the Secretary of the group in a suitable electronic format in advance of the meetings. The group may postpone discussing any item or proposal which has not been circulated 5 working days in advance of the scheduled meeting.
6. The Secretary of the group will distribute the draft meeting minutes to the informal group members within 15 working days after the meeting of the group. The draft minutes will be considered and adopted at the next session of the IWG. The adopted minutes will be submitted to GRE and will be used by the IWG Chairman as a basis for his reporting to GRE about the activities of the IWG.
7. The IWG shall develop its opinions and draft proposals by consensus, and submit these to GRE for further consideration and decision. If the IWG cannot reach common agreement on particular items or proposals, the Chair shall present the issue to the GRE and/or the WP.29/AC1 for resolution. The IWG Chairman may seek guidance from GRE as appropriate.
8. Sessions shall be held in agreement with the majority of the participants after the group has been established in a constitutional meeting. Sessions may be in person or virtual using web-based technology.
9. A provisional agenda shall be drawn up by the secretariat in accordance with the proposals and requests received from the members of the group and with the agreement of the Chair. The first item upon the provisional agenda for each session shall be the adoption of the agenda.
10. The second item on the provisional agenda will be the discussion, matters arising and adoption of the minutes of the previous session.
11. The informal group VGL would provide GRE with status reports at each GRE sessions

**D) WORK PLAN AND TIME SCHEDULE**

The aim of IWG on VGL is to present [an informal document related to step 1] for consideration during the [75<sup>th</sup> and 76<sup>th</sup>] session of GRE in [April 2016 and October 2016 respectively]

The final objective of IWG is to present [a formal document related to step 1] for consideration during the [77<sup>th</sup>] session of GRE in [April 2017] for **consideration at** the [173<sup>th</sup>] session of WP29 in [November 2017]

Regarding step 2 the time line would be proposed at [76<sup>th</sup>] session of GRE

Meetings of the informal group will be scheduled to meet the timeline for deliverables. These meetings may be “in-person” or virtual (WebEx or similar).

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