

SLR ad-hoc meeting on “Headlamp levelling”

28 November 2019, 9:30 – 17:00

German Ministry of Transport
Robert-Schuman-Platz 1, 53175 Bonn

REPORT

		Documents
1.	<p>Welcome and opening remarks</p> <p>Mr. Rovers opened the meeting welcoming all the participants and thanking the host (German Ministry of Transport) for arranging this meeting in Bonn. Mr. Rovers informed that the ad-hoc Meeting will not make decisions. It is the intent to discuss the content of document GRE-82-25 presented during the 82. Session of GRE.</p>	
2.	<p>Introduction of participants and organisations</p> <p>A list of all participants is available in Annex 1 to this Report.</p>	
3.	<p>Adoption of the agenda</p> <p>The agenda was adopted with the insertion of new documents. A revised agenda, reflecting the agreed modifications, is been circulated as document Ad-hoc 01/Rev.1</p>	Ad-hoc 01/Rev.1
4.	<p>Amendment of UN R48 on the basis of the outcome of Visibility and Glare</p> <ul style="list-style-type: none"> - Proposal from SLR to amend UN R48 Document GRE-82-25 was introduced during the 82. Session of GRE. - Proposal from Japan to amend GRE-82-25 <p>Document Ad-hoc 02</p> <p>The presentation showed by Japan informed about the following: One vehicle type with one cleaning system was tested under following conditions:</p> <ul style="list-style-type: none"> • First experiment method => Verification by bench test (Halogen -, LED - and HID headlamps) • Second experiment method => Qualitative analysis of discomfort glare (HID headlamps) • Third experiment method => Verification in real-world environment (LED headlamps) <p>During the followed discussion it was mentioned:</p> <ul style="list-style-type: none"> • Only one vehicle type with one cleaning system been tested 	GRE-82-25 SLR-34-07 + Ad-hoc 02

	<ul style="list-style-type: none"> • The first time that snow and ice was considered • The presentation concluded that a headlamp cleaning system reduces glare • There are further studies available which should be considered; from Schmidt-Clausen, from University of Aachen etc. • Japan sees no alternative to the 2,000 lumen as the criteria whether a headlamp cleaning is necessary or not <p>Decision to be made by SLR:</p> <ul style="list-style-type: none"> • Further investigations regarding the correlation of headlamp-cleaning and glare should be done • As long as the outcome of further investigations is not available it has to be decided whether the requirement of mandatory headlamp cleaning for systems above 2,000 lumen should stay in UN R48. • Furthermore an amendment of UN R45 may be necessary <p>Document <u>GRE-82-25SLR-34-07</u> Based on document GRE-82-25 the proposal whether manual levelling (when levelling is necessary) should still be allowed or not was discussed. During the discussion it became evident that the correct use of manual levelling is not well known by the driver. Although the present representatives of the Contracting Parties were more in favour to allow only automatic levelling, it became obvious that the following has further to be considered:</p> <ul style="list-style-type: none"> • How can manual levelling been optimized in a way that a driver will use it in the correct way (displaying information about ON/OFF on a display, allowing only one measure to activate/deactivate the system, etc.)? • What are the costs of manual levelling compared to automatic levelling? • What are the experiences of professional drivers with manual levelling? • How is an automatic levelling working on trucks and buses having in mind that trucks very often been finalized by body-builder? <p>Decision to be made by SLR: How should the questions mentioned above been handled?</p>	
5.	<p>Influence of Periodical Technical Inspection regarding defining the initial aiming</p> <p>- Explanation by the expert from Germany</p> <p>Document Ad-hoc 03 The document was presented by D/BAST. The presentation came to the conclusion that because of the tolerances which have to be considered during the PTI of headlamps (headlamp levelling device, vehicle area) a deviation of $\pm 0.5\%$ is possible. Therefore it was recommended that the initial aim of vehicles should not be allowed to be above -0.5% (see green line in the diagram below) to avoid that vehicles after PTI are aimed above the cut-off.</p>	Ad-hoc 03

	<p>Decision to be made by SLR: Should the area for defining the initial aim be restricted to -0.5%?</p>	
6.	<p>Requirements for dynamic levelling devices to prevent headlamp glare blinding oncoming road users Final report by Technical University Darmstadt, April 2019 Document SLR-34-01</p> <p>The final report of the University of Darmstadt was presented by Germany. This report came to the following conclusion: The present study has shown that the use of a Dynamic Headlamp Levelling Devices (dHLD) with an aim to preventing or at least reducing glare appears to be useful and advisable for all vehicle classes. In view of the data at hand, linking of the mandatory use of an aHLD to a luminous flux exceeding 2,000 lm is not recommendable. Furthermore, the results of the present study show that the following fundamental requirements should be introduced in order to minimise glare caused by vehicle headlamps:</p> <ul style="list-style-type: none"> • dHLDs for all headlamp systems • linking of the control range (angles) of the dHLDs to the pitch of vehicles with maximum added load • a mean overall system latency of less than 220 ms, with and without added load, for a DE BOER rating of 6, and of less than 350 ms for a DE BOER rating of 5 (just acceptable glare - cf. Section 4.5.2) <p>Furthermore Germany informed that they are planning to present the outcome of the study during the 83. GRE to start the discussion on the topic of dHLD.</p> <p>Decision to be made by SLR:</p> <ul style="list-style-type: none"> • No decision necessary for the moment. • Further Consideration in future may be necessary. 	SLR-34-01
7.	<p><u>Continuation of agenda topic 4.)</u> Amendment of UN R48 on the basis of the outcome of Visibility and Glare</p> <ul style="list-style-type: none"> - Proposal from Poland to amend GRE-82-25 - Polish justification for GRE-82-43 	GRE-82-43 VGL-08-14/Rev.1, GRE-78-23/Rev.1, VGL-10-06

	<p>Document GRE-82-43 Poland presented and explained the document together with the addition documents.</p> <p>Out of the discussion it was clear that Poland has the understanding that the part of the new diagram above “1.2 m headlamp mounting height” was not finally agreed by GRE. Therefore there maybe the necessity to further discuss the boundaries of this part of the diagram. Furthermore Poland proposed that the measures which will bring a system back in the diagram should be technical neutral. Therefore headlamp-levelling could be one of other possibilities and should therefore not explicit been mentioned.</p> <p>Decision to be made by SLR:</p> <ul style="list-style-type: none"> • What to do with the part of the diagram above “1.2 m headlamp mounting height”? • Should the measure to bring back the headlamp aiming into the boundaries of the diagram be technical neutral? 	
8.	<p>Next meeting(s) if necessary No further ad-hoc meeting were seen necessary.</p>	
9.	<p>Closure Mr. Rovers thanked all the participants in person and those participating via WebEx for their fruitful contribution and closed the meeting.</p>	

**GRE Informal Working Group on
Simplification of the UN Lighting and Light Signalling Regulation (SLR)
01. ad-hoc Meeting**

Attendee List

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