

## Comments from OICA experts on the draft conclusions made by the Chairman of the IWG, on the 7<sup>th</sup> meeting

As the report of the 7<sup>th</sup> meeting is not yet validated by the Chairman, OICA experts want to make some modifications on the conclusion that the Chairman of the IWG made. Modifications are in Yellow.

### Conclusions of 7<sup>th</sup> meeting of IWG-VGL:

A) Diagram was slightly rebuilt according new input and analysis:

Line 2 (line 6) – new line location proposed by Poland (line 7) based on calculated cut-off position and driver eye-height of 0.94 m assuming that for higher mounted headlamps **some risk of glare can will be** accepted up to 25m beyond car when passing. It confirms the previous proposed lines character, **with but adapts values to the some simple** performance based calculations. **The group decided to keep current line 2, to be on the safe side.**

Line 3 and 4 - proposed to have compromise performance line 8 (37.5 m) or line 9 (40m) to avoid **non-performance** line 3 but improve road illumination comparing performance line 5 (30 50m) and avoid two different classes (50m and 30m), **eg. for high and low speed vehicles. Industry indicated that this could be a problem, as it diminishes tolerances for lowest mounting heights.** Decision for the choice of the line(s) as limit for visibility to be taken at next meeting.

Present use of lower/upper edge of headlamp for bottom/top lines give **some more** tolerance space for real headlamps **comparing present situation**. All calculations and tests (e.g Klettwitz, TC 4-45, Polish performance calculations) were done for headlamp optical axis (headlamp centre of reference). Poland proposed to change definition in Reg. 48 from headlamp edge to headlamp axis because it will make no restrictions for manufacturers but give additional space and is real performance factor.-->-. There were opinions presented to make no change for the time being and to take into account this proposal for the stage 2

All lines will be unconditionally treated as maximum limits without possibility to further modification (even for CoP).

It is needed to verify feasibility in real vehicles of above proposals and prepare clear and convincing justification to finalize “box” shape e.g. base for 0.94 m eye-height.

**In addition, it is needed to define a solution for mounting height until 1,5m (notably N3G vehicle categories). Industry suggested that the lines from the new limits tolerance “box” could be extended for highest mounting height. This needs to be checked once the box will be defined for mounting heights until 1,2m.**

There were presented some analysis (3 coming from different **OEMs sources** and differently based) whose explain that 1.6 % cut-off inclination tolerances field is absolute minimum needed by carmakers **to cover all real life conditions including COP. Unfortunately** some elements **they** were confidential. **Moreover** it was raised that conditions of analysis were different than described in Annex 6 of Reg. 48. **The industry explained that this is because regulation is intended to cover all life situations.**

Also test done by Poland on 4 diesel vehicles in different conditions give much narrow results **even were done in different conditions and for relatively small number of vehicles.**

**It is needed more data based on condition adequate to Reg. 48 Annex 6 and public accessible or find another solution of the problem which will be clearly justified.**

B) Chairman of the group proposed to abandon trying to find “replacement” for 2000 Im criterion as separation between possibility of automatic or manual levelling device and left it to manufacturer choice under condition that used ~~system levelling device~~ will guarantee that under any allowable vehicle static load circumstances the cut-off inclination will be inside ~~limit tolerances~~ “box”.

Justification: There was no sense in the past to separate two kind of levelling device and this separation was artificial one. Therefore looking for another criterion will be ineffective because of artificial basis of such separation and no one of proposed alternatives (GTB/OICA and Poland) looks to be generally accepted ~~and it is no new idea for such criterion.~~

Need to decide if such attempt is possible; ~~otherwise, eventually~~ propose alternatives ; ~~and~~ prepare justification.

C) Loading conditions – to be finalised:

The group agrees that under any allowable loading conditions of a M or N vehicle, the cut-off line must remain within the ~~limit tolerance~~ “box”, if necessary using some levelling system.

There are now three attempts to the problem:

1) Polish – ~~guarantee that under any allowable loading conditions for all kind of vehicle (M and N) the cut-off line will be in tolerance field (now prepared “box”) using any effective levelling device (automatic or manual).~~ The procedure of finding extreme loading conditions was proposed but because it looks to be laborious to implement in real life for all vehicles for some special cases Poland agree to find the extreme values using any effective method. ~~For time being~~ The group agreed that it is already used in present in Annex 5 of ECE R48.

2) GTB/OICA – keep current loading conditions of Annex 5 of ECE R48, as they cover worst cases (even rarely occurring) as well as realistic intermediate loading conditions ~~live as today and the GTB/OICA proposal was for M1 and N1 derived from M1 vehicles → it was proposed by Jean-Louis Chazalotte during the meeting to extend the lines 2 and 4 for higher mounting heights but needed to check with other OEMs~~

3) Italy - change and (reduce) loading conditions number of present Annex 5 requirements to make unregulated situation when only driver and full load in trunk is present – basically remove p.2.1.1.6. Case 6 (worst pitch angle with full load in the trunk) should be removed, as it is very rarely occurring in real life.

→ Proposal VGL-08-02 and justification expected (now accessible).

Need to find final solution which will properly solve problem of pitch/load and prepare unquestionable justification.