

Report from the informal group on Camera-Monitor Systems, UN Regulation No. 46 (Devices for indirect vision)

The text reproduced below has been prepared by the expert from the Netherlands to inform GRSG on the work progress of the informal group on Camera-Monitor Systems (IGCMS-II).

1. At its 105th session, GRSG decided to restart the informal working group on camera-monitor systems (IGCMS) for the replacement of mirrors of class I to IV and [VII] by camera-monitor systems (CMS) and agreed on the Terms of Reference (ToR) for a further stage II. WP.29 gave its consent in its 161st session. The main reason for re-establishing the informal group is that the simple reference to ISO-16505, as given in ECE/TRANS/WP.29/GRSG/2011/23/Rev.1, is not appropriate as that the standard will contain several recommendations instead of clear type-approval requirements.

Participants of IGCMS-II are representing vehicle manufacturers, manufacturers of devices for indirect vision as well as Contracting Parties and technical services from Germany, UK, France, Japan and the Netherlands,
The officers for IGCMS-II are Mr. Schoenemann of Gentex (secretary) and Mr. Jongenelen from the Netherlands (chairman).

2. IGCMS-II met several times as follows:
 - 1st meeting: 5 and 6 February 2014 in Cologne,
 - 2nd meeting: 27 and 28 March 2014 in Berlin,
 - a short intermediate telephone conference on 5 March 2014 which faced technical problems while another telephone conference is scheduled for 13 May 2014.Further meetings are scheduled for 5 and 6 June in Paris and, if needed, 29 and 30 September 2014 in Geneva.
The planning is to have the final proposal available in GRSG-107, preferable as a formal document or otherwise as an informal document. Adoption by GRSG should take place in its spring 2015 session.
3. First meeting (5 and 6 February 2014)
The IG agreed in principle with the ToR as adopted by GRSG in its 105th session, however:
 - * it is not the intention of the IG to make proposals for improvement of the provisions of UN Regulation No. 46, but only for amendments for the application of CMS of class I to IV and [VII] under the same conditions as for mirrors and
 - * the primary task has already been finalized by IGCMS-I.IGCMS-II took note of a presentation on the progress of the development of ISO 16505; it is expected that the standard will be published at the end of 2014,
The IG started a first discussion of a proposal by Germany for amending document ECE/TRANS/WP.29/GRSG/2011/23/Rev.1.
All documents are available on the website of the informal group.
4. The working document IGCMS-01-02 is based on the principle that for devices for indirect vision of class I to IV and [VII] the requirements and test methods of ISO-16505 will apply

unless otherwise provided in a new Annex 12 to UN-Regulation No. 46. Such topics of Annex 12 concern:

- functional safety,
- adjusted default view,
- overlays,
- operating readiness
- installation of the monitor in a vehicle (obstruction of the field of vision, positioning, reflection),
- luminance and contrast of the monitor,
- gray scale rendering,
- smear,
- point light sources,
- color noise,
- geometric distortion,
- pixel faults,
- flicker,
- glare on the monitor,
- image formation time,
- failure behavior and
- image quality.

It is recognized that further distinction is needed between requirements for component approvals and for installation approvals.

5. Second meeting (27 and 28 March 2014).

The group noted a presentation of BAST on the comparison of the use of CMS with the use of mirrors; the conclusion was that no significant differences are recognized.

The IG continued the examination of the German proposal and

- supports, in majority, the idea that a modification of the view by the driver should not be regulated but left to the responsibility of the vehicle manufacturer,
- reached a principle agreement on several topics like adjusted default view, operating readiness, viewing angle, flicker and image formation time, while for the other topics listed above further discussions are needed,
- will not deal with devices of class VII for category L vehicles as ISO 16505 doesn't cover CMS's of class VII unless a specific contribution of that vehicle sector is provided,
- supports, in majority, the view that the amendment of UN Regulation No. 46 can get the format of a supplement as no changes for existing approvals are proposed,

The group will also submit in the 107th session of GRSG an editorial amendment to UN Regulation No. 125 for taking account of obstructions of the driver's direct field of view by CMS as well; that proposal should be treated by GRSG and WP.29 in parallel.