Report on the third meeting of the GRRF-informal group TPMS (Tyre Pressure Monitoring Systems), 19./20.06.2008, Paris.

Venue: OICA-offices
4, rue de Berri
75008 Paris
Chairman : Walter Reithmaier (TÜV SÜD Automotive)
Attendance-list: see attachment

1. Report on the second meeting (TPM-02-04)

The report was approved without comments.

2. Agenda for the third meeting (Amendments/Priorities)

Three additional items were put on the agenda:

- Presentation of NL – Explanation of data selection
- Presentation of Cost/Benefit-Analysis by Schrader (TPM-03-03)
- NL-proposal to amend ECE R 64 (TPM-03-05)

The amended version of the agenda was distributed as document TPM-03-01_rev.1.

The chairman declared that in future only such documents will be accepted for consideration which are presented by a government or an association (OICA, ETRTO, CLEPA). Documents from inividual persons or companies will not be considered.

3. Presentation of NL – Explanation of data selection (TPM-03-06) and report of the task force "Data Collection and Cost/Benefit-Analysis (Doc. TPM-03-02)

Further measurements of real tyre pressures on passenger cars in use have taken place in the Netherlands between October 2007 and April 2008. The Dutch delegate gave some explanations about these measurements which were conducted mainly by students on the car parks of companies and shopping centers. The owners of the cars were asked if they agree with the measurements and got a refill of their tyres with nitrogen to the inflation pressure recommended by the manufacturer after the measurement. Some more information about the measuremants can be found in doc. TPM-03-06.
The recorded pressure data were sent together with the VIN numbers of the vehicles to OICA and the task force "data collection" for further analysis, also to find out which of the vehicles were equipped with TPMS.
Between February 12, 2008 and June 9, 2008 the task force "Data Collection and Cost/Benefit-Analysis" under the chairmanship of Mr.Vim Verhove (CLEPA) had 7 meetings to collect tyre pressure data of vehicles in use in various countries including the data from NL mentioned above, to analyse and to compare these data, to develop a calculation method for the increase in fuel consumption/CO2-emission due to underinflation, to consider the effect of underinflation on tyre wear and road safety, to find the causes of underinflation and to determin the cost for TPMS.
The latest version of the task force conclusions was distributed as doc. TPM-03-02_rev.1. Mr. Verhoeve reported that the task force had difficulties to determin the cost for TPMS. OICA had tabled some figures but they have not yet been discussed in the group. When discussing the results some experts tried to point out advantages and disadvantages of specific TPMS

designs. The chairman stopped this discussion because it is not the task of this group to draft requirements for specific designs of TPMS but to define minimum requirements which will reduce the number of vehicles which are driven with underinflated tyres.

4. Presentation of Cost/Benefit-Analysis by Schrader (Doc. TPM-03-03)

A representative from Schrader presented a draft for a cost/benefit-analysis of TPMS. The draft was supported by further companies (Conti VDO, Knorr-Bremse, Beru, Entire Solutions LLC) but it is not a CLEPA- or an ETRTO- paper. The calculations in the draft which are based on a direct system show a very positive benefit/cost-relation even if the lower end of the range is taken for comparison. Besides fuel/CO2 saving and accident avoidance the TPMS can contribute a lot to tyre cost reduction because tyre wear increases considerably on underinflated tyres.
There was agreement that the draft could be refined by taking into account further aspects like changing from summer to winter tyres or replacement/disposal of sensors and sealings. However, it is obvious that the EU- commission wants to use the potential for CO2-reduction which is given by TPMS and therefore further refinement of the cost/benefit calculation does not seem to be necessary.

5. OICA Study about Influence Factors to Low Tire Pressure Warning Threshold (TPM-03-07) and OICA Position on TPMS (TPM-03-08)

OICA presented an investigation about the influence of various tolerances on the accuracy of TPMS warning thresholds. (TPMS-03-07) The main factors which influence the tyre pressure are:

- ambient temperature change (daily, weekly, monthly)
- tyre warming up by driving
- pressure gauge accuracy at filling stations
- TPMS sensor accuracy
- natural pressure loss by permeation

All these tolerances must be taken into account when setting the warning thresholds. OICA deems a pressure drop threshold of at least 25% necessary to avoid false alarms. Experience in the USA shows that there are many customer complaints if the warning threshold is too narrow. Pressure gauge accuracy at filling stations is an important item which cannot be influenced by a regulation for TPMS. The governments and the EU-Commission should find a way to guarantee minimum accuracy of these devices in all countries.

OICA presented its informal paper “TPMS OICA position” (Doc. TPM-03-08). The main items of this informal paper are:

- Comparison of direct and indirect TPMS
- Proposal for a revised test procedure (pressure drop related to pwarm instead of Prec. cold)
- Introduction of TPRS (Tyre Pressure Reminder System)
- CO2 benefits of TPRS
- Proposal for 2 different routes
  Route A: TPMS for CO2 and safety
  Route B: TPRS for CO2 and TPMS for safety
- Open issues

ETRTO explained that from their point of view CO2 and safety could not be seperated completely because driving with an underinflated tyre for a longer period (CO2) also affects

the durability of a tyre which means safety. The government representatives from D and J declared that they can agree in principal with the OICA position, NL and UK were not satisfied with TPRS, also the representative of the EU-Commission had doubts about the efficiency of TPRS. There was general agreement that no specific design of TPMS should be required and each manufacturer could choose his own way to achieve the target of CO2 reduction and better road safety. The representative of the EU-Commission informed the group that a European Safety Directive will be published which also includes TPMS. There could be a reference to an ECE-Regulation on TPMS, if this appears satisfying but an own European Directive on TPMS would also be possible.

5. Report of the task force "Revision of D-proposal for a draft Regulation on TPMS" and Discussion of the results (Doc. TPM-03-04)

The question came up, how the text for a draft regulation should be dealt with if there is no agreement on certain items. Mr. Hesse, Germany, declared that it is the task of this group to discuss the German proposal for a draft Regulation on TPMS. If there is no agreement on certain items, Germany will choose a wording which is the best in their opinion. Other governments or associations can send their comments to the text.
The German propoposal for a draft regulation on TPMS was discussed during 2 meetings of the task force under the chairmanship of Mr. Zastrow (OICA). The task force made some progress but several items were left open and put into square brackets, because no agreement could be achieved. The following important items were discussed during this meeting:

- Harmonisation with FMVSS 138
  J would prefer a regulation which is based on US-FMVSS 138, ETRTO is not in favour of FMVSS 138.
- warm tyre inflation pressure
  Definition for this pressure should be introduced.
- tyre pressure monitoring
  Mr. Hesse (D) will draft a new text for a definition
- warning delay
  OICA, D, F, J, NL can agree with 10 min.
  10 min will be insertet, experts who cannot agree may sent written comments via their association.
- pressure drop for deflated tyre detection
  Different opinions (20%, 25%, 20kPa, tolerances, avoidance of false alert) ETRTO will contact OICA after having discussed this item further.
- TPRS
  will be put into square brackets

6. NL proposal to amend ECE R 64 (Doc. TPM-03-05)

The discussion of this item was deferred because it depends on the decision of GRRF about an ECE-Regulation for TPMS. Requirements in R 64 will be superfluous when an ECE-Regulation for TPMS exists.

7. Further actions – Presentation of the results to GRRF

The group felt that it is to early to send the draft Regulation to GRRF because several items still need further discussion. So it was decided to give only a report about the stage of the

discussion at the GRRF-meeting in September 2008 and to have another meeting after the GRRF.

Manfred Hörner
(Secretary)

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