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Geneva, 6 April 2010

## **IRU POSITION ON THE TYRE PRESSURE MONITORING SYSTEMS (TPMS)**

*Unanimously adopted by the IRU International Technical Commission  
on 9 March 2010*

### **IRU position on the tyre pressure monitoring systems.**

#### **I. ANALYSIS**

A "Tyre Pressure Monitoring System" (TPMS) is a system fitted on a vehicle to evaluate the inflation pressure of the tyres or the variation of this inflation pressure over time and to transmit corresponding information to the user whilst the vehicle is running.

Any Tyre Pressure Monitoring System (TPMS) fitted on a vehicle shall comply with the requirements of Regulation No. 10 on electromagnetic interferences.

The TPMS is primarily used to monitor the state of inflation of a tyre during normal operation. Loss of tyre pressure can cause damage to the strength and durability of a tyre and the performance of a vehicle (overheating, traction, handling, braking and fuel economy). Two different TPMS technologies are currently available:

- The **active system** (direct) can directly monitor the pressure through a sensor mounted into the tyre rubber. The systems can monitor not only the pressure, but the temperature inside the tyre as well.

All data are transferred by radio frequency to an on-board vehicle unit, which duly informs the driver through a message on a display panel.

New technologies are looking also into monitoring not only the pressure and the temperature, but the durability life of the tyre through a Radio Frequency Identification (RFID).

- The **passive system** (indirect) monitors inflation through individual wheel rotational speeds. Newer developments of indirect TPMS use the spectral content of the wheel speed sensor signals. There are no additional sensors needed and the calculations are carried out by usual processors such as ABS or ESC control units.

This passive system offers a comparably simpler and more economic solution than the active system, but is not as accurate. It signals only if leakage exceeds 30% (0.6 bars) which can be sufficient for heavy vehicles, but can pre-damage a tyre over a longer period of time.

#### **II. IRU POSITION**

All advanced safety systems, such as TPMS for heavy vehicles, should be carefully analysed in order to avoid misinterpretation of the real needs of the market and consequences on the road transport as a whole. As long as no real cost benefit analyses are available, TPMS should only be available on a voluntary basis for heavier vehicles.

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Further harmonisation and standardisation are requested regarding the devices, measurement methods and radio frequencies in order to correctly and efficiently promote TPMS and increase clarity and transparency for operators active internationally. Adequate infrastructure should also be implemented, especially at refilling stations.

All existing systems should be used in a flexible way because all manufacturers use different tools in different countries.

Drivers should be correctly trained on the use of such new systems, although too much attention should not be given to advance driving systems because they reduce drivers' responsibilities and they might become overconfident.

Liability issues should also be considered in the development process of the TPMS as such devices may not work sometimes due to technical failures.

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