

Outcome of the ACV working group meeting 6 based on document ACV-06-02

## Proposed amendment to ECE Regulation 13

The text reproduced below was prepared by the experts of the informal working group ACV for the amendment of Regulation No. 13. This is to enable the use of automatic couplings systems.

The modifications to the existing text of the Regulation are marked in **bold** characters.

### I. Proposal

Insert new paragraphs 2.39. and 2.40., to read:

- 2.39. **"Brake electric/electronic interface" means the part of a separable electrical/electronic connection between the towing vehicle and the towed vehicle which is dedicated to the braking system and is part of an automated or automatic connector**
- 2.40. **"Automated Connector" means a system through which the electrical connection, or the electric and pneumatic connection, between the towing vehicle and towed vehicle is made automatically without direct intervention of a human operator.**

Amend paragraph 5.1.3.6. to read:

- 5.1.3.6. a) The electric control line shall conform to ISO 11992-1 and 11992-2:2003 including its amendment 1:2007 and be a point-to-point type using :
- i) the seven pin connector according to ISO 7638-1 or 7638-2:2003 **or,**
  - ii) **in the case of systems where the connection of the electric control line is automated, the automated connector shall provide as a minimum the same number of pins [with the same electrical conductivity properties and electrical functionality] as the above mentioned ISO 7638 connector and meet the requirements specified in Annex 22 of this Regulation.**
- b) The data contacts of the ISO 7368 connector shall be used to transfer information exclusively for braking (including ABS) and running gear (steering, tyres and suspension) functions as specified in ISO 11992-2:2003 including its Amd.1:2007. The braking functions have priority and shall be maintained in the normal and failed modes. The transmission of running gear information shall not delay braking functions.



- c) The power supply, provided by the ISO 7638 connector, shall be used exclusively for braking and running gear functions and that required for the transfer of trailer related information not transmitted via the electric control line. However, in all cases the provisions of Paragraph 5.2.2.18. of this Regulation shall apply. The power supply for all other functions shall use other measures.

Amend paragraph 5.2.1.23. to read:

- 5.2.1.23. Power driven vehicles authorized to tow a trailer equipped with an anti-lock system shall also be equipped with a special electrical connector, conforming to ISO 7638:2003<sup>1</sup>, for the electric control transmission. **Alternatively [or in addition], in the case of systems where the connection of the electric control line is automated, the automated connector shall meet the requirements specified in Annex 22 of this Regulation.**

**Comment [C1]:** suppl.5 to the 11 series of amend./doc. 2010/64

Amend paragraph 5.2.2.17. to read:

- 5.2.2.17. Trailers equipped with an electric control line and O<sub>3</sub> and O<sub>4</sub> category trailers equipped with an anti-lock system, shall be fitted with a special electrical connector for the braking system and/or anti-lock system, conforming to ISO 7638:2003<sup>15, 2</sup>. **Alternatively [or in addition], in the case of systems where the connection of the electric control line is automated, the automated connector shall meet the requirements specified in Annex 22 of this Regulation.**

Failure warning signals required from the trailer by this Regulation shall be activated via the above connectors. The requirement to be applied to trailers with respect to the transmission of failure warning signals shall be those, as appropriate, which are prescribed for motor vehicles in paragraphs 5.2.1.29.4., 5.2.1.29.5. and 5.2.1.29.6.

Trailers equipped with an ISO 7638:2003 connector as defined above shall be marked in indelible form to indicate the functionality of the braking system when the ISO 7638:2003 connector is connected and disconnected.<sup>3</sup>

The marking is to be positioned so that it is visible when connecting the pneumatic and electrical interface connections.

<sup>1</sup> The ISO 7638:2003 connector may be used for 5 pin or 7 pin applications, as appropriate.

<sup>2</sup> The conductor cross sections specified in ISO 7638:2003 for the trailer may be reduced if the trailer is installed with its own independent fuse. The rating of the fuse shall be such that the

<sup>3</sup> In the case of a trailer equipped with both an ISO 7638 connector and automated connector, the marking shall show that the ISO 7638 connector should not be connected when an automated connector is in use.



Add Annex 22 to read:

Annex 22

REQUIREMENTS FOR THE BRAKE ELECTRIC/ELECTRONIC INTERFACE

**1. General**

**This annex defines the requirements applicable to installations where the connection and disconnection of the brake electric/electronic interface between the towing vehicle and the towed vehicle is achieved by an automated connector.**

**2. Requirements**

**The electric/electronic interface of the automated connector shall achieve the same functional requirements as specified for the ISO 7638 connector throughout this regulation and its annexes.**

**2.1 The contacts (pins and sockets) for the brake electric/electronic interface shall have the same electrical current carrying capability and functionality as the ISO 7638 contacts.**

**2.2. Deviating from ISO 11992-1, the maximum permissible cable lengths shall be :**

**Towing vehicle  $l_1$  : 18m**

**Coiled cable  $l_2$  : 0 m**

**Towed vehicle  $l_3$ : 22 m.**

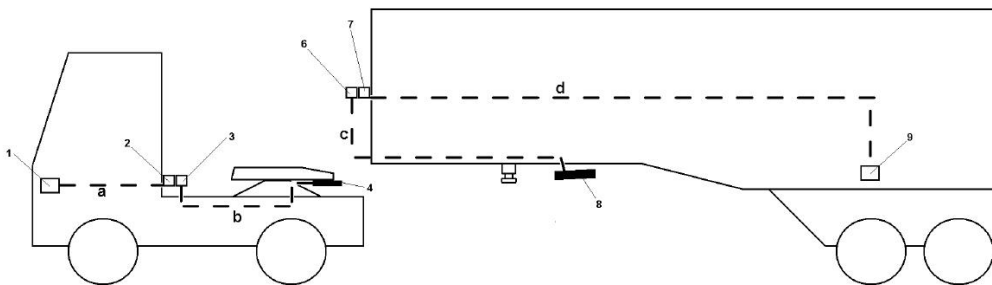
**2.4. Vehicles being equipped with both a connector conforming to ISO 7638 and an automated connector shall be built in such a way that if unintentionally both connectors are connected, there is no conflict in the functioning of the electric control transmission or in the transmission of information in accordance with ISO 11992-2:2003 including Amendment 1:2007.**

**[2.4.1. This shall be accomplished automatically. Alternatively, if not accomplished automatically, the trailer brakes must be automatically applied and remain applied until the ISO 7638 connector is disconnected.]**



## ELECTRICAL LAYOUT OF AN AUTOMATED CONNECTION BETWEEN VEHICLES - TRACTOR AND SEMI-TRAILER EXAMPLE

### Automated connection mode



**Insert here the electrical part of the new legend**

A schematic diagram of a truck-mounted crane system. The diagram shows a truck chassis with a crane mounted on it. The crane consists of a boom (5) and a jib (7). The boom is supported by a hydraulic cylinder (2) and a pivot point (1). The jib is supported by a hydraulic cylinder (6) and a pivot point (3). The crane is mounted on a truck chassis (4). The truck chassis is shown with two wheels. The crane is shown in a retracted position. The diagram is labeled with numbers 1 through 9, corresponding to the components listed in the table.

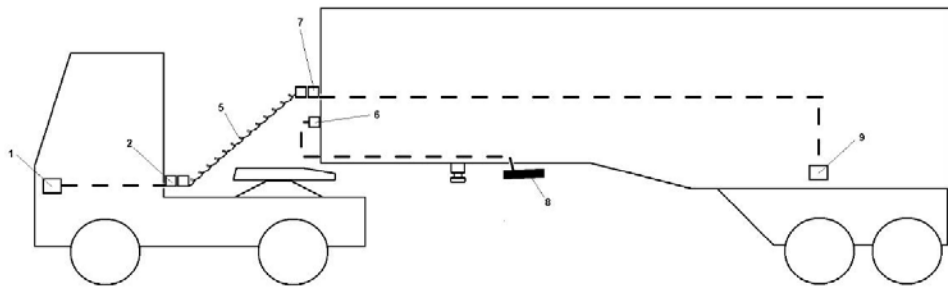
**Figure B: Point-to-point connection ECU Tractor (1) and ECU Trailer (9) when Fifth Wheel is closed**  
**Manual mode: Coiled cables connected, Connection between 3 and 6 as 4 and 8 are not connected ??????**



The diagram shows a truck chassis with a crane and a trailer. The crane is mounted on the chassis and has a boom with a hook. The trailer is attached to the chassis and has a single axle. The components are labeled with numbers 1 through 9:

- 1: Crane base
- 2: Crane boom
- 3: Crane hook
- 4: Crane cable
- 5: Crane pulley
- 6: Crane winch
- 7: Crane support
- 8: Crane cable drum
- 9: Crane cable reel

**Manual mode B (only the semi-trailer equipped with automated connection)**



**Figure D: Point-to-point connection ECU Tractor (1) and ECU Trailer (9) when Fifth Wheel is closed**  
**Coiled cables connected, Line 6 to 8 is not connected ??????**