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**Group of Experts on European Agreement Concerning Work of
Crews of Vehicles Engaged in International Road Transport (AETR)**

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AETR Appendix 1C

Submitted by the European Commission

This document, submitted by the European Commission, proposes a version of AETR Appendix 1C (which incorporates the comments of the Russian Federation from Informal document no.1).

Appendix 1C

Requirements for construction, testing, installation and inspection of smart tachographs

Article 1

Annex IC to Commission Implementing Regulation (EU) 2016/799 is inserted as Appendix 1C to the Annex to the AETR, with the amendments set out in Article 3.

Article 2

Appendix 1C may be amended by the procedure specified in Article 22 of the AETR.

Article 3

3.1. Point 4.1 is changed as follows: [card layout]

3.1.1. Requirements (227) to (229) are changed as follows:

(227) the words 'Driver card' or 'Control card' or 'Workshop card' or 'Company card' printed in capital letters in the official language or languages of the Contracting Party issuing the card, according to the type of the card.'

(228) the name of the Contracting Party issuing the card (optional)

(229) the distinguishing sign of the Contracting Party issuing the card. The distinguishing signs of non EU Contracting Parties are those drawn in accordance with the 1968 Vienna Convention on Road Traffic or the 1949 Geneva Convention on Road Traffic.

3.1.2. In requirement (235), the term 'Member State' is replaced by the term 'Contracting Party'. The reference to the EU flag with the letters 'MS' meaning 'Member State' is replaced by the letters 'CP' meaning 'Contracting Party', the flag of the non EU Contracting Party being optional.

3.1.3. Requirement (236) is changed as follows:

(236) After consulting the UN/ECE secretariat, Contracting Parties may add colours or markings, such as security features, without prejudice to the other provisions of this Appendix.'

3.2. Requirement (241) is changed as follows: [testing temperatures]

(241) Tachograph cards shall be capable of operating correctly in all the climatic conditions normally encountered in Community territory and at least in the temperature range -25 °C to $+70\text{ °C}$ with occasional peaks of up to $+85\text{ °C}$, 'occasional' meaning not more than 4 hours each time and not over 100 times during the life time of the card.'

3.3. Point 8.4 is changed as follows: [interoperability laboratories]

3.3.1. Requirement (440) is changed as follows:

'(440) Interoperability tests are carried out by a single laboratory under the authority and responsibility of the European Commission.'

3.3.2. Requirements (440a) and (440b) are inserted:

'(440a) Laboratories other than the one referred to in paragraph (440) may be allowed to carry out interoperability tests, provided that there is a **previous agreement among AETR Contracting Parties** on the following aspects:

- The way in which the full equivalence between laboratories is guaranteed, including the creation of new and complete reference sets.
- The performance of regular cross validations to ensure certification equivalence, conflict resolution mechanisms.
- The centralization of the information and certificates in a centralized repository (secured database & website).

(440b) Laboratories allowed to carry out interoperability tests shall be accredited by the laboratory referred to in paragraph (440), in accordance with a specific set of criteria addressing the aspects listed in paragraph (440a). The set of criteria shall be annexed to the AETR.'

3.4. The test number 4.1 for the tachograph cards referred to in Appendix 9 is changed as follows:

4.1	Chip	<p>[Operating temperature] The Tachograph card chip shall operate in an ambient temperature range between -25 °C and +85 °C.</p> <p>[Temperature and humidity] Annex 1C, chapter 4.4 'Environmental and electrical specifications', 241) Tachograph cards shall be capable of operating correctly in all the climatic conditions normally encountered in Community territory and at least in the temperature range -25 °C to +70 °C with occasional peaks of up to +85 °C, "occasional" meaning not more than 4 hours each time and not over 100 times during the life time of the card.</p> <p>The Tachograph cards are exposed in consecutive steps to the following temperatures and humidities for the given time. After each step the Tachograph cards are tested for electrical functionality.</p> <p>1. Temperature of - 20 °C for 2 h. 2. Temperature of +/- 0 °C for 2 h. 3. Temperature of + 20 °C, 50 % RH, for 2 h. 4. Temperature of + 50 °C, 50 % RH, for 2 h. 5. Temperature of + 70 °C, 50 % RH, for 2 h.</p> <p>The temperature is increased intermittently to + 85 °C, 50 % RH, for 60 min.</p> <p>6. Temperature of + 70 °C, 85 % RH, for 2 h. The temperature is increased intermittently to + 85 °C, 85 % RH, for 30 min.</p>	<p>241 to 244 ECE R10 ISO/IEC 7810 ISO/IEC 10373</p>
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		<p>[Humidity] Annex 1C, chapter 4.4 'Environmental and electrical specifications', 242) Tachograph cards shall be capable of operating correctly in the humidity range 10% to 90%.</p>	
		<p>[Electromagnetic compatibility - EMC] Annex 1C, chapter 4.4 'Environmental and electrical specifications' 244) During operation, Tachograph cards shall conform to ECE R10 related to electromagnetic compatibility.</p>	
		<p>[Static electricity] Annex 1C, chapter 4.4 'Environmental and electrical specifications', 244) During operation, Tachograph cards shall be protected against electrostatic discharges. Tachograph cards must conform to standard ISO/IEC 7810:2003/Amd. 1:2009, Identification cards – Physical characteristics, Amendment 1: Criteria for cards containing integrated circuits [9.4] Static electricity [9.4.1] Contact IC cards Test voltage: 4000 V.</p>	
		<p>[X-rays] Tachograph cards must conform to standard ISO/IEC 7810:2003/Amd. 1:2009, Identification cards – Physical characteristics, Amendment 1: Criteria for cards containing integrated circuits [9.1] X-rays</p>	
		<p>[Ultraviolet light] ISO/IEC 10373-1:2006, Identification cards - Test methods - Part 1: General characteristics [5.11] Ultraviolet light</p>	
		<p>[3-wheel] Tachograph cards must conform to standard ISO/IEC 10373-1:2006/Amd. 1:2012, Identification cards - Test methods - Part 1: General characteristics, Amendment 1 [5.22] ICC - Mechanical strength: 3 wheel test for ICCs with contacts</p>	
		<p>[Wrapping] Tachograph cards must conform to standard MasterCard CQM V2.03:2013 [11.1.3] R-L3-14-8: Wrapping Test Robustness [13.2.1.32] TM-422: Mechanical Reliability: Wrapping Test</p>	

3.5. Point 2 of Appendix 12 is changed as follows: **GNSS and EGNOS**

3.5.1. The first paragraph is deleted.

[Regardless of the configuration of the Smart Tachograph with or without an external GNSS facility, the provision of accurate and reliable positioning information is an essential element of the effective operation of the Smart Tachograph. Therefore, it is appropriate to require its compatibility with the services provided by the Galileo and European Geostationary Navigation Overlay Service (EGNOS) programmes as set out in Regulation (EU) No 1285/2013 of the European Parliament and of the Council (1). The system established under the Galileo programme is an independent global satellite navigation system and the one established under the EGNOS programme is a regional satellite navigation system improving the quality of the Global Positioning System signal]

3.5.2. Requirement GNS_2 is changed as follows:

'GNS_2 Manufacturers shall ensure that the GNSS receivers in the smart tachographs are compatible with the positioning services provided by GPS, GLONASS and Galileo. Manufacturers may also choose, in addition, compatibility with other satellite navigation systems.'

3.5.3. A requirement GNS_4 is added:

'GNS_4 GNSS receivers may be also capable of receiving and processing SBAS signals.'