

Commission Regulation (EU) No 566/2011 of 8 June 2011 amending Regulation (EC) No 715/2007 of the European Parliament and of the Council and Commission Regulation (EC) No 692/2008 as regards access to vehicle repair and maintenance information (Text with EEA relevance)

ANNEX I

Amendments to certain Annexes to Regulation (EC) No 692/2008

(1) Annex I is amended as follows:

(a) point 2.3.1 is replaced by the following:

2.3.1. Any vehicle with an emission control computer shall include features to prevent modification, except as authorised by the manufacturer. The manufacturer shall authorise modifications if these modifications are necessary for the diagnosis, servicing, inspection, retrofitting or repair of the vehicle. Any reprogrammable computer codes or operating parameter shall be resistant to tampering and afford a level of protection at least as good as the provisions in ISO 15031-7; dated 15 March 2001 (SAE J2186 dated October 1996). Any removable calibration memory chips shall be potted, encased in a sealed container or protected by electronic algorithms and shall not be changeable without the use of specialised tools and procedures. Only features directly associated with emissions calibration or prevention of vehicle theft may be so protected.;

(b) Figure I.2.4 is replaced by the following:

FIGURE I.2.4.

Application of test requirements for type approval and extensions

	Vehicles with positive ignition engines including hybrids					Vehicles with C.I. engines including hybrids				
	Mono fuel		Bi fuel ^a			Flex fuel ^a	Flex fuel	Mono fuel		
Reference fuel	Petrol (E5)	LPG	NG/Biomethane	Hydrogen	Petrol (E5)	Petrol (E5)	Petrol (E5)	Petrol (E5)	Diesel (B5)	Diesel (B5)
					LPG	NG/Biomethane	Hydrogen	Ethanol (E85)	Biodiesel	
Gaseous pollutants (Type 1 test)	Yes	Yes	Yes		Yes (both fuels)	Yes (both fuels)	Yes (petrol only) ^b	Yes (both fuels)	Yes (B5 only) ^b	Yes
Particulate mass & Particle number (Type 1 test)	Yes	—	—		Yes (petrol only)	Yes (petrol only)	Yes (petrol only) ^b	Yes (both fuels)	Yes (B5 only) ^b	Yes

a Where a bi fuel vehicle is combined with a flex fuel vehicle, both test requirements are applicable.

b This provision is temporary, further requirements for biodiesel and hydrogen shall be proposed later on.

c Test on petrol only before the dates set out in Article 10(6) of Regulation (EC) No 715/2007. The test will be performed on both fuels after these dates. The E75 test reference fuel specified in Annex IX Section B shall be used.

1 test)										
Idle emissions (Type 2 test)	Yes	Yes	Yes		Yes (both fuels)	Yes (both fuels)	Yes (petrol only) ^b	Yes (both fuels)	—	—
Crankcase emissions (Type 3 test)	Yes	Yes	Yes		Yes (petrol only)	Yes (petrol only)	Yes (petrol only) ^b	Yes (petrol)	—	—
Evaporative emissions (Type 4 test)	—	—	—		Yes (petrol only)	Yes (petrol only)	Yes (petrol only) ^b	Yes (petrol)	—	—
Durability (Type 5 test)	Yes	Yes	Yes		Yes (petrol only)	Yes (petrol only)	Yes (petrol only) ^b	Yes (petrol)	Yes (B5 only) ^b	Yes
Low temperature emissions (Type 6 test)	Yes	—	—		Yes (petrol only)	Yes (petrol only)	Yes (petrol only) ^b	Yes (both fuels) ^c		
In-service conformity	Yes	Yes	Yes		Yes (both fuels)	Yes (both fuels)	Yes (petrol only) ^b	Yes (both fuels)	Yes (B5 only) ^b	Yes
On-board diagnostics	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
CO₂ emissions and fuel consumption	Yes	Yes	Yes		Yes (both fuels)	Yes (both fuels)	Yes (petrol only)	Yes (both fuels)	Yes (B5 only) ^b	Yes
Smoke opacity	—	—	—		—	—	—	—	Yes (B5 only) ^b	Yes;

a Where a bi fuel vehicle is combined with a flex fuel vehicle, both test requirements are applicable.

b This provision is temporary, further requirements for biodiesel and hydrogen shall be proposed later on.

c Test on petrol only before the dates set out in Article 10(6) of Regulation (EC) No 715/2007. The test will be performed on both fuels after these dates. The E75 test reference fuel specified in Annex IX Section B shall be used.

(c) in Appendix 3, point 3.4.8 is replaced by the following:

3.4.8. Vehicle electric range ... km (according to Annex 9 to UN/ECE Regulation No 101);

(d) in Appendix 4, point 3.2 is replaced by the following:

3.2. Terms and conditions of access (i.e. duration of access, price of access on a hourly, daily, monthly, annual and per-transaction basis) to websites referred to in point 3.1): ...;

(e) in Appendix 6, the following is added to key of table 1:

Euro 5b emissions standard	=	Full Euro 5 emission requirements including revised measurement procedure for particulates, particle number standard and flex fuel vehicle low temperature emission testing with biofuel.
Euro 6b emissions standard	=	Full Euro 6 emission requirements including revised measurement procedure for particulates, particle number standard and flex fuel vehicle low temperature emission testing with biofuel.
Euro 5 OBD standards	=	Base Euro 5 OBD requirements excluding in-use-performance ratio (IUPR), NO _x monitoring for petrol vehicles and tightened PM threshold limits for diesel.
Euro 6 OBD standards	=	Full Euro 6 OBD requirements.;

(2) Annex III is amended as follows:

(a) point 3.1 is replaced by the following:

3.1. The technical requirements shall be those set out in Annex 4 to UN/ECE Regulation No 83 with the exceptions set out in points 3.2 to 3.12. As from the dates set out in the second sentence of Article 10(6) of Regulation (EC) No 715/2007 the mass of particulate matter (PM) and the number of particles (P) shall be determined according the emission test procedure set out in Section 6 of Annex 4a to UN/ECE Regulation No 83, series of amendments 05, supplement 07, using the test equipment described in points 4.4 and 4.5 thereof, respectively.;

(b) in point 3.4, the following is added:

For ethanol (E75) (C ₁ H _{2,61} O _{0,329})	d = 0,886 g/l;
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(c) the table in point 3.8 is replaced by the following:

Fuel	X
Petrol (E5)	13,4
Diesel (B5)	13,5
LPG	11,9
NG/biomethane	9,5
Ethanol (E85)	12,5

Ethanol (E75)	12,7
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(d) in point 3.10, the following is added:

$$Q_{\text{THC}} = 0,886 \text{ in the case of ethanol (E75);}$$

(e) the following point 3.14 is added:

3.14. As from the dates laid down in Article 2 of Commission Directive 2008/89/EC⁽¹⁾ the daytime running lamps of the vehicle as defined in Section 2 of UN/ECE Regulation No 48⁽²⁾ shall be switched on during the test cycle. The vehicle tested shall be equipped with the daytime running lamp system that has the highest electrical energy consumption among the daytime running lamp systems, which are fitted by the manufacturer to vehicles in the group represented by the type-approved vehicle. The manufacturer shall supply appropriate technical documentation to the type-approval authorities in this respect.;

(3) in Annex IV, point 2.2 of Appendix 1 is replaced by the following:

2.2. The atomic ratios specified in point 5.3.7.3 shall be understood as follows:

Hcv = Atomic ratio of hydrogen to carbon

- for petrol (E5) 1,89
- for LPG 2,53
- for NG/biomethane 4,0
- for ethanol (E85) 2,74
- for ethanol (E75) 2,61

Ocv = Atomic ratio of oxygen to carbon

- for petrol (E5) 0,016
- for LPG 0,0
- for NG/biomethane 0,0
- for ethanol (E85) 0,39
- for ethanol (E75) 0,329;

(4) in Annex VIII, point 2.3 is replaced by the following:

2.3. The limit values referred to in point 5.3.5.2 of UN/ECE Regulation No 83 relate to the limit values set out in Annex 1, Table 4, to Regulation (EC) No 715/2007.;

(5) at the end of Annex IX, Section B, the text ‘Reference fuel specification to be developed in advance of the dates set out in Article 10(6) of Regulation (EC) No 715/2007’ shall be replaced by the following table:

‘Parameter	Unit	Limits ^a		Test method ^b
		Minimum	Maximum	
Research octane number, RON		95	—	EN ISO 5164
Motor octane number, MON		85	—	EN ISO 5163
Density at 15 °C	kg/m ³	report		EN ISO 12185

Status: This is the original version (as it was originally adopted).

Vapour pressure	kPa	50	60	EN ISO 13016-1 (DVPE)
Sulphur content ^{cd}	mg/kg	—	10	EN ISO 20846 EN ISO 20884
Oxidation stability	minutes	360	—	EN ISO 7536
Existent gum content (solvent washed)	mg/100ml	—	4	EN ISO 6246
Appearance shall be determined at ambient temperature or 15 °C whichever is higher		Clear and bright, visibly free of suspended or precipitated contaminants		Visual inspection
Ethanol and higher alcohols ^g	% (V/V)	70	80	EN 1601 EN 13132 EN 14517
Higher alcohols (C ₃ – C ₈)	% (V/V)	—	2	
Methanol		—	0,5	
Petrol ^e	% (V/V)	Balance		EN 228
Phosphorus	mg/l	0,3 ^f		EN 15487 ASTM D 3231
Water content	% (V/V)	—	0,3	ASTM E 1064 EN 15489
Inorganic chloride content	mg/l	—	1	ISO 6227 — EN 15492
pHe		6,5	9	ASTM D 6423 EN 15490
Copper strip corrosion (3h at 50 °C)	Rating	Class 1		EN ISO 2160
Acidity (as acetic acid CH ₃ COOH)	% (m/m)		0,005	ASTM D1613 EN 15491
	mg/l		40	
Carbon/hydrogen ration		report		
Carbon/oxygen ration		report		

^a The values referred to in the specifications are “true values”. When establishing the value limits, the terms of ISO 4259 Petroleum products — Determination and application of precision data in relation to methods of test were applied. When fixing a minimum value, a minimum difference of 2R above zero was taken into account. When fixing a maximum and minimum value, the minimum difference used was 4R (R = reproducibility). Notwithstanding this procedure, which is

necessary for technical reasons, fuel manufacturers shall aim for a zero value where the stipulated maximum value is 2R and for the mean value for quotations of maximum and minimum limits. Where it is necessary to clarify whether fuel meets the requirements of the specifications, the ISO 4259 terms shall be applied.

- | | |
|----------|---|
| b | In cases of dispute, the procedures for resolving the dispute and interpretation of the results based on test method precision, described in EN ISO 4259 shall be used. |
| c | In cases of national dispute concerning sulphur content, either EN ISO 20846 or EN ISO 20884 shall be called up similar to the reference in the national annex of EN 228. |
| d | The actual sulphur content of the fuel used for the Type 6 test shall be reported. |
| e | The unleaded petrol content may be determined as 100 minus the sum of the percentage content of water and alcohols. |
| f | There shall be no intentional addition of compounds containing phosphorus, iron, manganese, or lead to this reference fuel. |
| g | Ethanol to meet specification of EN 15376 is the only oxygenate that shall be intentionally added to this reference fuel.' |

(6) Annex XI is amended as follows:

(a) the following point 2.14 is added:

2.14. As from 1 September 2011, in deviation from point 3.3.5 of Annex 11 to UN/ECE Regulation No 83, a particulate trap, where fitted as a separate unit or integrated into a combined emission control device, shall always be monitored at least for total failure or removal if the latter resulted in exceeding the applicable emission limits. It shall also be monitored for any failure that would result in exceeding the applicable OBD threshold limits.;

(b) point 3.3 is replaced by the following:

3.3. The approval authority shall not accept any deficiency request that includes the complete lack of a required diagnostic monitor or of mandated recording and reporting of data related to a monitor.;

(c) Appendix 1 is amended as follows:

(i) points 3.1.7 and 3.1.8 are replaced by the following:

3.1.7. The manufacturer shall demonstrate to the approval authority and, upon request, to the Commission that these statistical conditions are satisfied for all monitors required to be reported by the OBD system according to point 3.6 of this Appendix not later than 18 months after the entry onto the market of the first vehicle type with IUPR in an OBD family and every 18 months thereafter. For this purpose, for OBD families consisting of more than 1 000 registrations in the Union, that are subject to sampling within the sampling period, the process described in Annex II shall be used without prejudice to the provisions of point 3.1.9 of this Appendix.

In addition to the requirements set out in Annex II and regardless of the result of the audit described in Section 2 of Annex II, the authority granting the approval shall apply the in-service conformity check for IUPR described in Appendix 1 to Annex II in an appropriate number of randomly determined cases. "In an appropriate number of randomly determined cases" means, that this measure has a dissuasive effect on non-compliance with the requirements of Section 3 of this Annex or the provision of manipulated, false or non-representative data for the audit. If no special circumstances apply and can be demonstrated by the type-

approval authorities, random application of the in-service conformity check to 5 % of the type approved OBD families shall be considered as sufficient for compliance with this requirement. For this purpose, type-approval authorities may find arrangements with the manufacturer for the reduction of double testing of a given OBD family as long as these arrangements do not harm the dissuasive effect of the type-approval authority's own in-service conformity check on non-compliance with the requirements of Section 3 of this Annex. Data collected by Member States during surveillance testing programmes may be used for in-service conformity checks. Upon request, type-approval authorities shall provide data on the audits and random in-service conformity checks performed, including the methodology used for identifying those cases, which are made subject to the random in-service conformity check, to the Commission and other type-approval authorities.

3.1.8. For the entire test sample of vehicles the manufacturer must report to the relevant authorities all of the in-use performance data to be reported by the OBD system according to point 3.6 of this Appendix in conjunction with an identification of the vehicle being tested and the methodology used for the selection of the tested vehicles from the fleet. Upon request, the type-approval authority granting the approval shall make these data and the results of the statistical evaluation available to the Commission and other approval authorities.;

(ii) the following point 3.1.10 is added:

3.1.10. Non-compliance with the requirements of point 3.1.6 established by tests described in points 3.1.7 or 3.1.9 shall be considered as an infringement subject to the penalties set out in Article 13 of Regulation (EC) No 715/2007. This reference does not limit the application of such penalties to other infringements of other provisions of Regulation (EC) No 715/2007 or this Regulation, which do not explicitly refer to Article 13 of Regulation (EC) No 715/2007.;

(iii) in point 3.3.2, the following points (e) and (f) are added:

(e) without prejudice to requirements for the increment of denominators of other monitors the denominators of monitors of the following components shall be incremented if and only if the driving cycle started with a cold start:

- (i) liquid (oil, engine coolant, fuel, SCR reagent) temperature sensors;
- (ii) clean air (ambient air, intake air, charge air, inlet manifold) temperature sensors;
- (iii) exhaust (EGR recirculation/cooling, exhaust gas turbo-charging, catalyst) temperature sensors;

(f) the denominators of monitors of the boost pressure control system shall be incremented if the all of the following conditions are met:

- (i) the general denominator conditions are fulfilled;

- (ii) the boost pressure control system is active for a time greater than or equal to 15 seconds.;
 - (iv) point 3.6.2 is replaced by the following:
 - 3.6.2. For specific components or systems that have multiple monitors, which are required to be reported by this point (e.g. oxygen sensor bank 1 may have multiple monitors for sensor response or other sensor characteristics), the OBD system shall separately track numerators and denominators for each of the specific monitors except those monitoring for short circuit or open circuit failures and report only the corresponding numerator and denominator for the specific monitor that has the lowest numerical ratio. If two or more specific monitors have identical ratios, the corresponding numerator and denominator for the specific monitor that has the highest denominator shall be reported for the specific component.;
- (7) Annex XII is amended as follows:
 - (a) point 2.3 is replaced by the following:
 - 2.3. Point 5.2.4 of UN/ECE Regulation No 101 shall read:
 - (1) density: measured on the test fuel according to ISO 3675 or an equivalent method. For petrol, diesel, biodiesel and ethanol (E85 and E75) the density measured at 15 °C will be used; for LPG and natural gas/biomethane a reference density shall be used, as follows:
 - 0,538 kg/litre for LPG,
 - 0,654 kg/m³ for NG (³)
 - (2) hydrogen-carbon-oxygen ratio: fixed values shall be used which are:
 - C₁H_{1,89}O_{0,016} for petrol,
 - C₁H_{1,86}O_{0,005} for diesel,
 - C₁H_{2,525} for LPG (liquefied petroleum gas),
 - CH₄ for NG (natural gas) and biomethane,
 - C₁H_{2,74}O_{0,385} for ethanol (E85),
 - C₁ H_{2,61} O_{0,329} for ethanol (E75).;
 - (b) the following point 3.5 is added:
 - 3.5. During the test cycle used for determining the CO₂ emissions and fuel consumption of the vehicle the provision of point 3.14 of Annex III shall apply.;
- (8) Annex XIV is amended as follows:
 - (a) in point 2.1, the following is added:

Information on all parts of the vehicle, with which the vehicle, as identified by the vehicle identification number (VIN) and any additional criteria such as wheelbase, engine output, trim level or options, is equipped by the vehicle manufacturer and which can be replaced by spare parts offered by the vehicle manufacturer to its authorised repairers or dealers or third parties by means of reference to

original equipment (OE) parts number, shall be made available in a database easily accessible to independent operators.

This database shall comprise the VIN, OE parts numbers, OE naming of the parts, validity attributes (valid-from and valid-to dates), fitting attributes and where applicable structuring characteristics.

The information on the database shall be regularly updated. The updates shall include in particular all modifications to individual vehicles after their production if this information is available to authorised dealers.;

(b) points 2.2 and 2.3 are replaced by the following:

- 2.2. Access to vehicle security features used by authorised dealers and repair shops shall be made available to independent operators under protection of security technology according to the following requirements:
- (i) data shall be exchanged ensuring confidentiality, integrity and protection against replay;
 - (ii) the standard [https//ssl-tls](https://ssl-tls) (RFC4346) shall be used;
 - (iii) security certificates in accordance with ISO 20828 shall be used for mutual authentication of independent operators and manufacturers;
 - (iv) the independent operator's private key shall be protected by secure hardware.

The Forum on Access to Vehicle Information provided for by paragraph 9 of Article 13 will specify the parameters for fulfilling these requirements according to the state-of-the-art.

The independent operator shall be approved and authorised for this purpose on the basis of documents demonstrating that they pursue a legitimate business activity and have not been convicted of relevant criminal activity.

- 2.3. Reprogramming of control units of vehicles manufactured later than 31 August 2010 shall be conducted in accordance with either ISO 22900 or SAE J2534, regardless of the date of type approval. For the validation of the compatibility of the manufacturer-specific application and the vehicle communication interfaces (VCI) complying to ISO 22900 or SAE J2534, the manufacturer shall offer either a validation of independently developed VCIs or the information, and loan of any special hardware, required for a VCI manufacturer to conduct such validation himself. The conditions of Article 7(1) of Regulation (EC) No 715/2007 apply to fees for such validation or information and hardware.

For vehicles manufactured before 1 September 2010 the manufacturer may offer either full reprogramming in accordance with ISO 22900 or SAE J2534 or reprogramming via the sale or lease of its own proprietary tool. In the latter case independent operators must get access in a non-discriminatory, prompt and proportionate way, and the tool must be provided in a usable form. The provisions of Article 7 of Regulation (EC) No 715/2007 shall apply to fees for the access to these tools.;

(c) point 2.8 is replaced by the following:

- 2.8. Manufacturers shall establish fees for hourly, daily, monthly, annual and per-transaction access to their repair and maintenance information websites, which are reasonable and proportionate.;
- (9) Annex XVI is amended as follows:
- (a) in point 6.2, the following is added:
- For the purposes of this point these situations are presumed to occur, if the applicable NO_x emission limit of Table 1 of Annex I to Regulation (EC) No 715/2007, multiplied by a factor of 1,5, is exceeded. By way of exception, for a vehicle approved to the interim Euro 6 OBD threshold limits of point 2.3.2 of Annex XI to this Regulation, those situations are presumed to occur if the applicable NO_x emission limit of Table 2 of Annex I to Regulation (EC) No 715/2007 is exceeded by 100 mg or more. NO_x emissions during the test to demonstrate compliance with these requirements shall be not more than 20 % higher than the values referred to in the first and second sentence.;
- (b) point 7.1 is replaced by the following:
- 7.1. Where reference is made to this point, non-erasable Parameter Identifiers (PID) shall be stored identifying the reason for and the distance travelled by the vehicle during the inducement system activation. The vehicle shall retain a record of the PID for at least 800 days or 30 000 km of vehicle operation. The PID shall be made available via the serial port of a standard diagnostic connector upon request of a generic scan tool according to the provisions of point 6.5.3.1 of Appendix 1 to Annex 11 to UN/ECE Regulation No 83 and point 2.5 of Appendix 1 to Annex XI to this Regulation. From the dates referred to in Article 17, the information stored in the PID shall be linked to the period of cumulated vehicle operation, during which it has occurred, with an accuracy of not less than 300 days or 10 000 km.;
- (10) in Annex XVIII, point 3.4.8 is replaced by the following:
- 3.4.8. Vehicle electric range ... km (according to Annex 9 to UN/ECE Regulation No 101).

ANNEX II

ANNEX II

IN-SERVICE CONFORMITY

1. INTRODUCTION
- 1.1. This Annex sets out the tailpipe emissions and OBD (inclusive IUPR_M) in-service conformity requirements for vehicles type approved to this Regulation.
2. AUDIT OF IN-SERVICE CONFORMITY
- 2.1. The audit of in-service conformity by the approval authority shall be conducted on the basis of any relevant information that the manufacturer has, under the same procedures as those for the conformity of production defined in Article 12(1) and (2) of Directive

2007/46/EC and in points 1 and 2 of Annex X to that Directive. Information from approval authority and Member State surveillance testing may complement the in-service monitoring reports supplied by the manufacturer.

- 2.2. The figure referred to in point 9 of Appendix 2 to this Annex and Figure 4/2 of Appendix 4 to UN/ECE Regulation No 83 (for tailpipe emissions only) illustrates the procedure for in-service conformity checking. The process for in-service conformity is described in Appendix 3 to this Annex.
- 2.3. As part of the information provided for the in-service conformity control, at the request of the approval authority, the manufacturer shall report to the type-approval authority on warranty claims, warranty repair works and OBD faults recorded at servicing, according to a format agreed at type-approval. The information shall detail the frequency and substance of faults for emissions-related components and systems. The reports shall be filed at least once a year for each vehicle model for the duration of the period defined in Article 9(4) of this Regulation.

2.4. **Parameters defining the tailpipe emissions in-service family**

The in-service family may be defined by basic design parameters which shall be common to vehicles within the family. Accordingly, vehicle types may be considered as belonging to the same in-service family if they have in common, or within the stated tolerances, the following parameters:

- 2.4.1. combustion process (two stroke, four stroke, rotary);
- 2.4.2. number of cylinders;
- 2.4.3. configuration of the cylinder block (in-line, V, radial, horizontally opposed, other. The inclination or orientation of the cylinders is not a criteria);
- 2.4.4. method of engine fuelling (e.g. indirect or direct injection);
- 2.4.5. type of cooling system (air, water, oil);
- 2.4.6. method of aspiration (naturally aspirated, pressure charged);
- 2.4.7. fuel for which the engine is designed (petrol, diesel, NG, LPG, etc.). Bi fuelled vehicles may be grouped with dedicated fuel vehicles providing one of the fuels is common;
- 2.4.8. type of catalytic converter (three-way catalyst, lean NO_x trap, SCR, lean NO_x catalyst or other(s));
- 2.4.9. type of particulate trap (with or without);
- 2.4.10. exhaust gas recirculation (with or without, cooled or non-cooled); and
- 2.4.11. engine cylinder capacity of the largest engine within the family minus 30 %.

2.5. **Information requirements**

An audit of in-service conformity will be conducted by the approval authority on the basis of information supplied by the manufacturer. Such information shall include in particular, the following:

- 2.5.1. the name and address of the manufacturer;
- 2.5.2. the name, address, telephone and fax numbers and e-mail address of his authorised representative within the areas covered by the manufacturer's information;

- 2.5.3. the model name(s) of the vehicles included in the manufacturer's information;
- 2.5.4. where appropriate, the list of vehicle types covered within the manufacturer's information, i.e. for tailpipe emissions, the in-service family group in accordance with point 2.4, and for OBD and IUPR_M, the OBD family in accordance with Appendix 2 to Annex XI;
- 2.5.5. the vehicle identification number (VIN) codes applicable to these vehicle types within the family (VIN prefix);
- 2.5.6. the numbers of the type-approvals applicable to these vehicle types within the family, including, where applicable, the numbers of all extensions and field fixes/recalls (re-works);
- 2.5.7. details of extensions, field fixes/recalls to those type-approvals for the vehicles covered within the manufacturer's information (if requested by the approval authority);
- 2.5.8. the period of time over which the manufacturer's information was collected;
- 2.5.9. the vehicle build period covered within the manufacturer's information (e.g. vehicles manufactured during the 2007 calendar year);
- 2.5.10. the manufacturer's in-service conformity checking procedure, including:
 - (i) vehicle location method;
 - (ii) vehicle selection and rejection criteria;
 - (iii) test types and procedures used for the programme;
 - (iv) the manufacturer's acceptance/rejection criteria for the family group;
 - (v) geographical area(s) within which the manufacturer has collected information;
 - (vi) sample size and sampling plan used;
- 2.5.11. the results from the manufacturer's in-service conformity procedure, including:
 - (i) identification of the vehicles included in the programme (whether tested or not). The identification shall include the following:
 - model name,
 - vehicle identification number (VIN),
 - vehicle registration number,
 - date of manufacture,
 - region of use (where known),
 - tyres fitted (tailpipe emissions only);
 - (ii) the reason(s) for rejecting a vehicle from the sample;
 - (iii) service history for each vehicle in the sample (including any re-works);
 - (iv) repair history for each vehicle in the sample (where known);
 - (v) test data, including the following:
 - date of test/download,
 - location of test/download,

- distance indicated on vehicle odometer;
- (vi) test data for tailpipe emissions only:
 - test fuel specifications (e.g. test reference fuel or market fuel),
 - test conditions (temperature, humidity, dynamometer inertia weight),
 - dynamometer settings (e.g. power setting),
 - test results (from at least three different vehicles per family);
- (vii) test data for $IUPR_M$ only:
 - all required data downloaded from the vehicle,
 - For each monitor to be reported the in-use-performance ratio $IUPR_M$;

2.5.12. records of indication from the OBD system;

2.5.13. for $IUPR_M$ sampling, the following:

- The average of in-use-performance ratios $IUPR_M$ of all selected vehicles for each monitor according to points 3.1.4 and 3.1.5 of Appendix 1 to Annex XI,
- The percentage of selected vehicles, which have an $IUPR_M$ greater or equal to the minimum value applicable to the monitor according to points 3.1.4 and 3.1.5 of Appendix 1 to Annex XI.

3. SELECTION OF VEHICLES FOR IN-SERVICE CONFORMITY

3.1. The information gathered by the manufacturer shall be sufficiently comprehensive to ensure that in-service performance can be assessed for normal conditions of use. The manufacturer's sampling shall be drawn from at least two Member States with substantially different vehicle operating conditions (unless only sold in one Member State). Factors such as differences in fuels, ambient conditions, average road speeds, and urban/highway driving split shall be taken into consideration in the selection of the Member States.

For OBD $IUPR_M$ testing only vehicles fulfilling the criteria of point 2.2.1 of Appendix 1 shall be included in the test sample.

- 3.2. In selecting the Member States for sampling vehicles, the manufacturer may select vehicles from a Member State that is considered to be particularly representative. In this case, the manufacturer shall demonstrate to the approval authority which granted the type approval that the selection is representative (e.g. by the market having the largest annual sales of a vehicle family within the Union). When a family requires more than one sample lot to be tested as defined in point 3.5, the vehicles in the second and third sample lots shall reflect different vehicle operating conditions from those selected for the first sample.
- 3.3. The emissions testing may be done at a test facility which is located in a different market or region from where the vehicles have been selected.
- 3.4. The in-service tailpipe emissions conformity tests by the manufacturer shall be continuously carried out reflecting the production cycle of applicable vehicles types within a given in-service vehicle family. The maximum time period between commencing two in-service conformity checks shall not exceed 18 months. In the case of vehicle types covered by an extension to the type-approval that did not require an emissions test, this period may be extended up to 24 months.

3.5. Sample size

3.5.1. When applying the statistical procedure defined in Appendix 2 (i.e. for tailpipe emissions), the number of sample lots shall depend on the annual sales volume of an in-service family in the Union, as defined in the following table:

EU Registrations per calendar year (for tailpipe emission tests), of vehicles of an OBD family with IUPR in the sampling period	Number of sample lots
up to 100 000	1
100 001 to 200 000	2
above 200 000	3

3.5.2. For IUPR, the number of sample lots to be taken is described in the table in point 3.5.1 and is based on the number of vehicles of an OBD family that are approved with IUPR (subject to sampling).

For the first sampling period of an OBD family, all of the vehicle types in the family that are approved with IUPR shall be considered to be subject to sampling. For subsequent sampling periods, only vehicle types which have not been previously tested or are covered by emissions approvals that have been extended since the previous sampling period shall be considered to be subject to sampling.

For families consisting of fewer than 5 000 EU registrations that are subject to sampling within the sampling period the minimum number of vehicles in a sample lot is six. For all other families, the minimum number of vehicles in a sample lot to be sampled is fifteen.

Each sample lot shall adequately represent the sales pattern, i.e. at least high volume vehicle types ($\geq 20\%$ of the family total) shall be represented.

4. On the basis of the audit referred to in Section 2 the approval authority shall adopt one of the following decisions and actions:
 - (a) decide that the in-service conformity of a vehicle type, vehicle in-service family or vehicle OBD family is satisfactory and not take any further action;
 - (b) decide that the data provided by the manufacturer is insufficient to reach a decision and request additional information or test data from the manufacturer;
 - (c) decide that based on data from the approval authority or Member State surveillance testing programmes, that information provided by the manufacturer is insufficient to reach a decision and request additional information or test data from the manufacturer;
 - (d) decide that the in-service conformity of a vehicle type, that is part of an in-service family, or of an OBD family, is unsatisfactory and proceed to have such vehicle type or OBD family tested in accordance with Appendix 1.

If according to the IUPR_M audit the test criteria of point 6.1.2 point (a) or (b) of Appendix 1 are met for the vehicles in a sample lot, the type-approval authority must take the further action described in point (d) of this point.

- 4.1. Where type 1 tests are considered necessary to check the conformity of emission control devices with the requirements for their performance while in service, such tests shall be carried out using a test procedure meeting the statistical criteria defined in Appendix 2.
- 4.2. The approval authority, in cooperation with the manufacturer, shall select a sample of vehicles with sufficient mileage whose use under normal conditions can be reasonably assured. The manufacturer shall be consulted on the choice of the vehicles in the sample and allowed to attend the confirmatory checks of the vehicles.
- 4.3. The manufacturer shall be authorised, under the supervision of the approval authority, to carry out checks, even of a destructive nature, on those vehicles with emission levels in excess of the limit values with a view to establishing possible causes of deterioration which cannot be attributed to the manufacturer (e.g. use of leaded petrol before the test date). Where the results of the checks confirm such causes, those test results shall be excluded from the conformity check.

Appendix 1

In-service conformity check

1. INTRODUCTION
 - 1.1. This Appendix sets out the criteria referred to in Section 4 regarding the selection of vehicles for testing and the procedures for the in-service conformity control.
2. SELECTION CRITERIA

The criteria for acceptance of a selected vehicle are defined for tailpipe emissions in points 2.1 to 2.8 and for IUPR_M in Sections 2.1 to 2.5.

- 2.1. The vehicle shall belong to a vehicle type that is type-approved under this Regulation and covered by a certificate of conformity in accordance with Directive 2007/46/EC. For checking of IUPR_M, the vehicle shall be approved to the OBD standards Euro 5+, Euro 6- plus IUPR or later. It shall be registered and have been used in the Union.
- 2.2. The vehicle shall have been in service for at least 15 000 km or 6 months, whichever the later, and for no more than 100 000 km or 5 years, whichever the sooner.
 - 2.2.1. For checking IUPR_M, the test sample shall include only vehicles that:
 - (a) have collected sufficient vehicle operation data for the monitor to be tested.

For monitors required to meet the in-use monitor performance ratio and to track and report ratio data pursuant to point 3.6.1 of Appendix 1 to Annex XI, sufficient vehicle operation data shall mean the denominator meets the criteria set forth below. The denominator, as defined in points 3.3 and 3.5 of Appendix 1 to Annex XI, for the monitor to be tested must have a value equal to or greater than one of the following values:

- (i) 75 for evaporative system monitors, secondary air system monitors, and monitors utilising a denominator incremented in accordance with point 3.3.2 points (a), (b) or (c) of Appendix 1 to Annex XI (e.g. cold start monitors, air conditioning system monitors, etc.); or

- (ii) 25 for particulate filter monitors and oxidation catalyst monitors utilising a denominator incremented in accordance with point 3.3.2(d) of Appendix 1 to Annex XI; or
 - (iii) 150 for catalyst, oxygen sensor, EGR, VVT, and all other component monitors;
- (b) have not been tampered with or equipped with add-on or modified parts that would cause the OBD system not to comply with the requirements of Annex XI.
- 2.3. There shall be a maintenance record to show that the vehicle has been properly maintained (e.g. has been serviced in accordance with the manufacturer's recommendations).
- 2.4. The vehicle shall exhibit no indications of abuse (e. g. racing, overloading, mis-fuelling, or other misuse), or other factors (e. g. tampering) that could affect emission performance. The fault code and mileage information stored in the computer shall be taken into account. A vehicle shall not be selected for testing if the information stored in the computer shows that the vehicle has operated after a fault code was stored and a relatively prompt repair was not carried out.
- 2.5. There shall have been no unauthorised major repair to the engine or major repair of the vehicle.
- 2.6. The lead content and sulphur content of a fuel sample from the vehicle tank shall meet the applicable standards laid down in Directive 98/70/EC of the European Parliament and of the Council⁽⁹⁾ and there shall be no evidence of mis-fuelling. Checks may be done in the tailpipe.
- 2.7. There shall be no indication of any problem that might jeopardise the safety of laboratory personnel.
- 2.8. All anti-pollution system components on the vehicle shall be in conformity with the applicable type-approval.

3. DIAGNOSIS AND MAINTENANCE

Diagnosis and any normal maintenance necessary shall be performed on vehicles accepted for testing, prior to measuring exhaust emissions, in accordance with the procedure laid down in points 3.1 to 3.7.

- 3.1. The following checks shall be carried out: checks on air filter, all drive belts, all fluid levels, radiator cap, all vacuum hoses and electrical wiring related to the antipollution system for integrity; checks on ignition, fuel metering and pollution control device components for maladjustments and/or tampering. All discrepancies shall be recorded.
- 3.2. The OBD system shall be checked for proper functioning. Any malfunction indications in the OBD memory shall be recorded and the requisite repairs shall be carried out. If the OBD malfunction indicator registers a malfunction during a preconditioning cycle, the fault may be identified and repaired. The test may be rerun and the results of that repaired vehicle used.
- 3.3. The ignition system shall be checked and defective components replaced, for example spark plugs, cables, etc.
- 3.4. The compression shall be checked. If the result is unsatisfactory the vehicle shall be rejected.

- 3.5. The engine parameters shall be checked to the manufacturer's specifications and adjusted if necessary.
- 3.6. If the vehicle is within 800 km of a scheduled maintenance service, that service shall be performed according to the manufacturer's instructions. Regardless of odometer reading, the oil and air filter may be changed at the request of the manufacturer.
- 3.7. Upon acceptance of the vehicle, the fuel shall be replaced with appropriate emission test reference fuel, unless the manufacturer accepts the use of market fuel.
4. IN-SERVICE TESTING
 - 4.1. When a check on vehicles is deemed necessary, emission tests in accordance with Annex III are performed on pre-conditioned vehicles selected in accordance with the requirements of Sections 2 and 3 of this Appendix. This test shall only include the measurement of particle number emissions for vehicles approved to the Euro 6 emission standards in categories W, X and Y as defined in Table 1 of Appendix 6 to Annex I. Pre-conditioning cycles additional to those specified in points 5.3 of Annex 4 to UN/ECE Regulation No 83 will only be allowed if they are representative of normal driving.
 - 4.2. Vehicles equipped with an OBD system may be checked for proper in-service functionality, of the malfunction indication, etc., in relation to levels of emissions (e.g. the malfunction indication limits defined in Annex XI) for the type-approved specifications.
 - 4.3. The OBD system may be checked, for example, for levels of emissions above the applicable limit values with no malfunction indication, systematic erroneous activation of the malfunction indication and identified faulty or deteriorated components in the OBD system.
 - 4.4. If a component or system operates in a manner not covered by the particulars in the type-approval certificate and/or information package for such vehicle types and such deviation has not been authorised under Article 13(1) or (2) of Directive 2007/46/EC, with no malfunction indication by the OBD, the component or system shall not be replaced prior to emission testing, unless it is determined that the component or system has been tampered with or abused in such a manner that the OBD does not detect the resulting malfunction.
5. EVALUATION OF EMISSION TEST RESULTS
 - 5.1. The test results shall be submitted to the evaluation procedure in accordance with Appendix 2.
 - 5.2. Test results shall not be multiplied by deterioration factors.
6. PLAN OF REMEDIAL MEASURES
 - 6.1. The approval authority shall request the manufacturer to submit a plan of remedial measures to remedy the non-compliance when:
 - 6.1.1. For tailpipe emissions, more than one vehicle is found to be an outlying emitter that meets either of the following conditions:
 - (a) the conditions set out in point 3.2.3 of Appendix 4 to UN/ECE Regulation No 83 and where both the approval authority and the manufacturer agree that the excess emission is due to the same cause; or

- (b) the conditions set out in point 3.2.4 of Appendix 4 to UN/ECE Regulation No 83 where the approval authority has determined that the excess emission is due to the same cause.
- 6.1.2. For $IUPR_M$ of a particular monitor M the following statistical conditions are met in a test sample, the size of which is determined according to point 3.5 of this Annex:
- (a) For vehicles certified to a ratio of 0,1 in accordance with point 3.1.5 of Appendix 1 to Annex XI, the data collected from the vehicles indicate for at least one monitor M in the test sample either that the test sample average in-use-performance ratio is less than 0,1 or that 66 % or more of the vehicles in the test sample have an in-use monitor performance ratio of less than 0,1.
- (b) For vehicles certified to the full ratios in accordance with point 3.1.4 of Appendix 1 to Annex XI, the data collected from the vehicles indicate for at least one monitor M in the test sample either that the test sample average in-use performance ratio in the test sample is less than the value $Test_{min}(M)$ or that 66 % or more of the vehicles in the test sample have an in-use performance ratio of less than $Test_{min}(M)$.
- The value of $Test_{min}(M)$ shall be:
- (i) 0,230 if the monitor M is required to have an in-use ratio of 0,26;
- (ii) 0,460 if the monitor M is required to have an in-use ratio of 0,52;
- (iii) 0,297 if the monitor M is required to have an in-use ratio of 0,336;
- according to point 3.1.4 of Appendix 1 to Annex XI.
- 6.2. The plan of remedial measures shall be filed with the type-approval authority not later than 60 working days from the date of the notification referred to in point 6.1. The type-approval authority shall within 30 working days declare its approval or disapproval of the plan of remedial measures. However, where the manufacturer can demonstrate, to the satisfaction of the competent approval authority, that further time is required to investigate the non-compliance in order to submit a plan of remedial measures, an extension shall be granted.
- 6.3. The remedial measures shall apply to all vehicles likely to be affected by the same defect. The need to amend the type-approval documents shall be assessed.
- 6.4. The manufacturer shall provide a copy of all communications related to the plan of remedial measures, and shall also maintain a record of the recall campaign, and supply regular status reports to the approval authority.
- 6.5. The plan of remedial measures shall include the requirements specified in points 6.5.1 to 6.5.11. The manufacturer shall assign a unique identifying name or number to the plan of remedial measures.
- 6.5.1. A description of each vehicle type included in the plan of remedial measures.
- 6.5.2. A description of the specific modifications, alterations, repairs, corrections, adjustments or other changes to be made to bring the vehicles into conformity including a brief summary of the data and technical studies which support the decision of the manufacturer as to the particular measures to be taken to correct the non-conformity.

- 6.5.3. A description of the method by which the manufacturer informs the vehicle owners.
- 6.5.4. A description of the proper maintenance or use, if any, which the manufacturer stipulates as a condition of eligibility for repair under the plan of remedial measures, and an explanation of the reasons why the manufacturer imposes any such condition. No maintenance or use conditions may be imposed unless it is demonstrably related to the non-conformity and the remedial measures.
- 6.5.5. A description of the procedure to be followed by vehicle owners to obtain correction of the non-conformity. This description shall include a date after which the remedial measures may be taken, the estimated time for the workshop to perform the repairs and where they can be done. The repair shall be done expeditiously, within a reasonable time after delivery of the vehicle.
- 6.5.6. A copy of the information transmitted to the vehicle owner.
- 6.5.7. A brief description of the system which the manufacturer uses to assure an adequate supply of component or systems for fulfilling the remedial action. It shall be indicated when there will be an adequate supply of components or systems to initiate the campaign.
- 6.5.8. A copy of all instructions to be sent to those persons who are to perform the repair.
- 6.5.9. A description of the impact of the proposed remedial measures on the emissions, fuel consumption, driveability, and safety of each vehicle type, covered by the plan of remedial measures with data and technical studies which support these conclusions.
- 6.5.10. Any other information, reports or data the type-approval authority may reasonably determine is necessary to evaluate the plan of remedial measures.
- 6.5.11. Where the plan of remedial measures includes a recall, a description of the method for recording the repair shall be submitted to the type-approval authority. If a label is used, an example of it shall be submitted.
- 6.6. The manufacturer may be required to conduct reasonably designed and necessary tests on components and vehicles incorporating a proposed change, repair, or modification to demonstrate the effectiveness of the change, repair, or modification.
- 6.7. The manufacturer is responsible for keeping a record of every vehicle recalled and repaired and the workshop which performed the repair. The type-approval authority shall have access to the record on request for a period of 5 years from the implementation of the plan of remedial measures.
- 6.8. The repair and modification or addition of new equipment shall be recorded in a certificate supplied by the manufacturer to the vehicle owner.

Appendix 2

Statistical procedure for tailpipe emissions in-service conformity testing

1. This procedure shall be used to verify the in-service conformity requirements for the type 1 test. The applicable statistical method set out in Appendix 4 to UN/ECE Regulation No 83 shall apply, with the exceptions described in the Sections 2 to 9 of this Appendix.

2. Note 1 shall not apply.

3. Point 3.2 shall be understood as follows:

A vehicle is said to be an outlying emitter when the conditions given in point 3.2.2 are met.

4. Point 3.2.1 shall not apply.

5. In point 3.2.2, the reference to row B of the table in point 5.3.1.4 shall be understood as reference to Table 1 of Annex I to Regulation (EC) No 715/2007 for Euro 5 vehicles and to Table 2 of Annex I to Regulation (EC) No 715/2007 for Euro 6 vehicles.

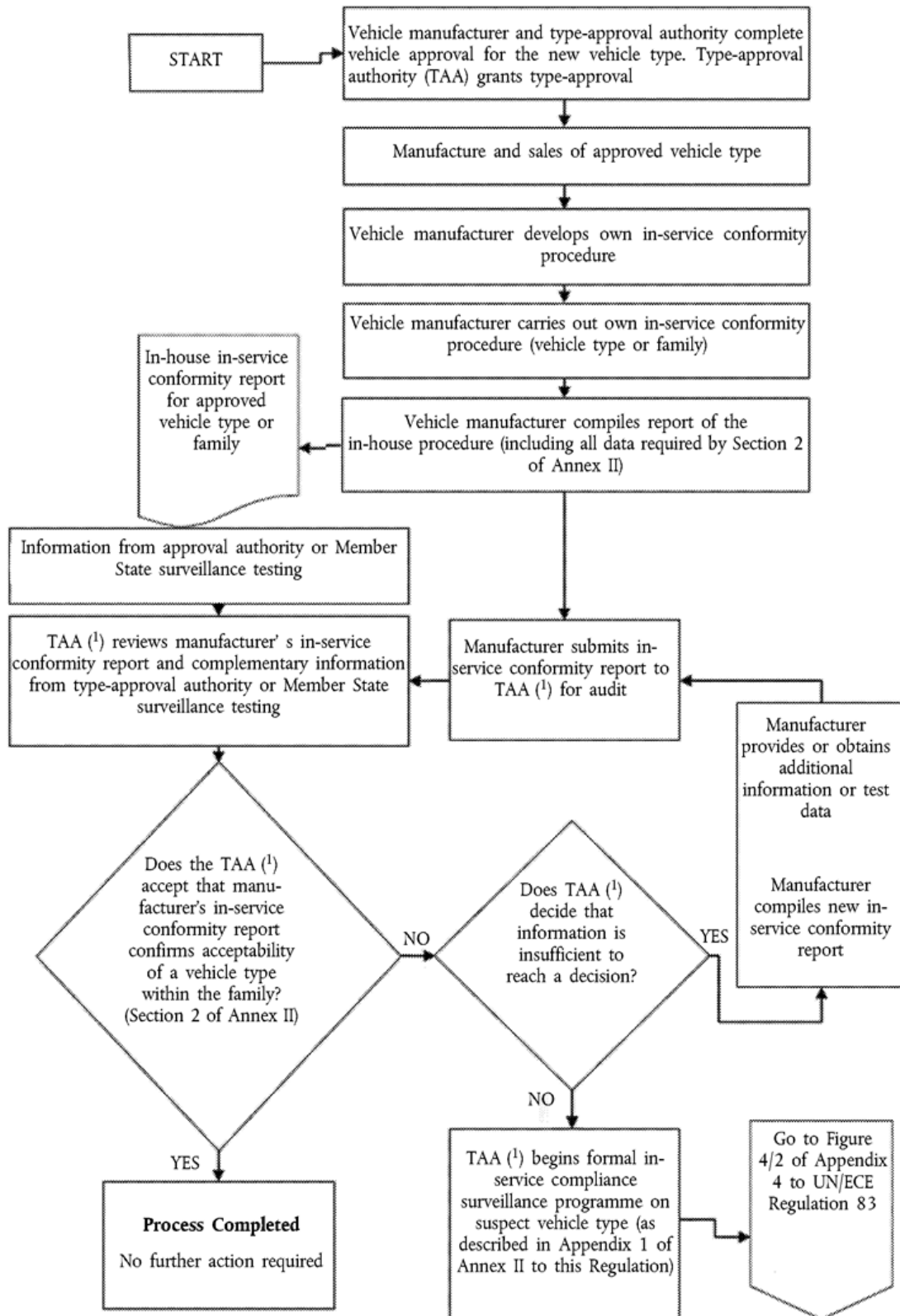
6. In points 3.2.3.2.1 and 3.2.4.2, the reference to Section 6 of Appendix 3 shall be understood as reference to Section 6 of Appendix 1 to Annex II to this Regulation.

7. In notes 2 and 3, the reference to row A of the table in point 5.3.1.4 shall be understood as reference to Table 1 of Annex I to Regulation (EC) No 715/2007 for Euro 5 vehicles and to Table 2 of Annex I to Regulation (EC) No 715/2007 for Euro 6 vehicles.

8. In point 4.2, the reference to point 5.3.1.4 shall be understood as reference to Table 1 of Annex I to Regulation (EC) No 715/2007 for Euro 5 vehicles and Table 2 of Annex I to Regulation (EC) No 715/2007 for Euro 6 vehicles.

9. Figure 4/1 shall be replaced by the following figure:

Figure



4/1 ⁽¹⁾ In this case, TAA means the approval authority that granted the type-approval according to this Regulation.”

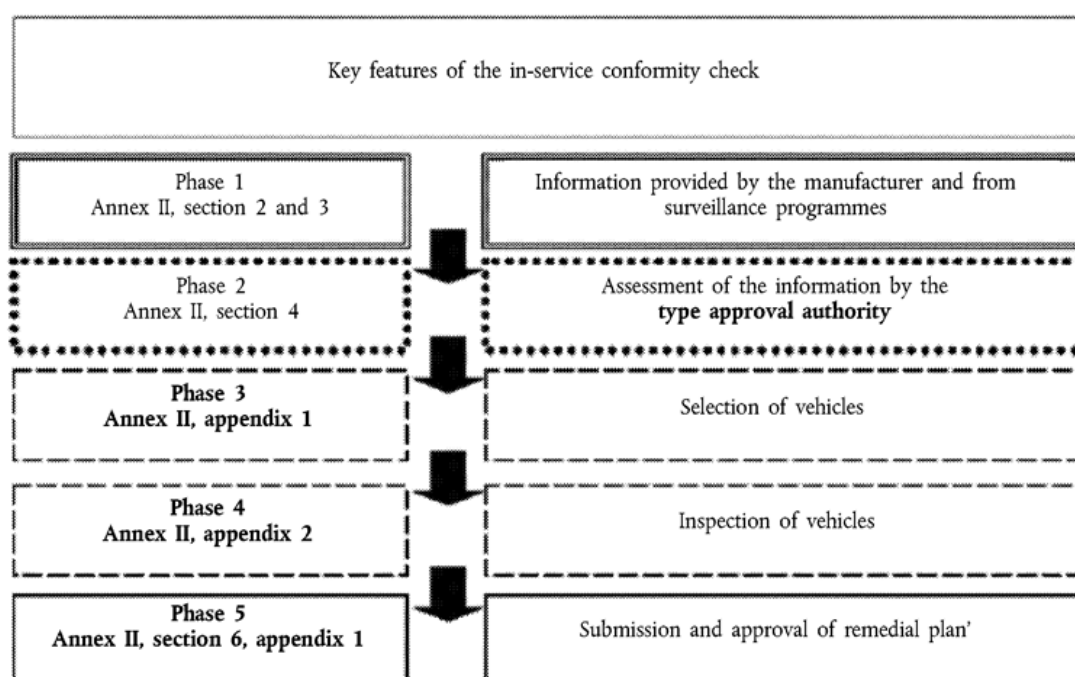
Appendix 3

Responsibilities for in-service conformity

1. The process of checking in-service conformity check is illustrated in Figure 1.
2. The manufacturer shall compile all the information needed to comply with the requirements of this Annex. The approval authority may also take information from surveillance programmes into consideration.
3. The approval authority shall conduct all the procedures and tests necessary to ensure that the requirements regarding the in-service conformity are met. (Phases 2 to 4).
4. In the event of discrepancies or disagreements in the assessment of information supplied, the approval authority shall request clarification from the technical service that conducted the type-approval test.
5. The manufacturer shall establish and implement a plan of remedial measures. This plan shall be approved by the approval authority before it is implemented (Phase 5).

Figure 1

Illustration of the in-service conformity process



Status: This is the original version (as it was originally adopted).

- (1) OJ L 257, 25.9.2008, p. 14.
- (2) OJ L 135, 23.5.2008, p. 1.;
- (3) OJ L 350, 28.12.1998, p. 58.