	OBD new GTR draft Red text means change from sources	Sources	comments CLEPA green indicates ok from CLEPA point of view blue indicates proposal / discussion needed red means error identified
Annex 1	**Functional aspects of On-Board Diagnostic (OBD) systems**		ok
1.	**Introduction**		ok
	The on-board diagnostic systems fitted on vehicles in the scope of this gtr shall comply with the detailed information and functional requirements and verification test procedures of this annex in order to harmonize the systems and to verify if the systems ~~is~~ are capable of meeting the functional part of the on-board diagnostic requirements.	1. of GTR No. 18	wording amended
2.	**On-board diagnostic functional verification testing**		ok
2.1.	~~If applied by a Contracting Party~~ the on-board diagnostic environmental system performance and the functional OBD capabilities may be verified and demonstrated to the approval authority by performing the type VIII test procedure referred to in Annex ~~6~~3.	2.1. of GTR No. 18	ok
3.	**Diagnostic signals**	3.	ok
3.1.	~~Except in the case of grade A OBD, u~~ Freeze Frame: Upon determination of the first malfunction of any component or system, "freeze-frame" engine conditions present at the time shall be stored in computer memory in accordance with the specifications for Service $02 in the standard referenced in paragraph 3.10. Stored engine conditions shall include, but are not limited to, calculated load value, engine speed, fuel trim value(s) (if available), fuel pressure (if available), vehicle speed (if available), coolant temperature (if available), intake manifold pressure (if available), closed- or open-loop operation (if available) and the diagnostic trouble code which caused the data to be stored.	3.1. of GTR No. 18	ok proposal added

3.1.1.	~~Except in the case of grade A OBD, t~~The manufacturer shall choose the most appropriate set of conditions facilitating effective and efficient repairs in freeze-frame storage. Only one frame of data is required. Manufacturers may choose to store additional frames provided that at least the required frame can be read by a ~~generic~~ scan tool meeting the specifications of paragraphs 3.9. ~~and 3.10~~. If the diagnostic trouble code causing the conditions to be stored is erased in accordance with paragraph 5.3.10.1. ~~5.2.4.8.1.~~ of section II the stored "freeze frame" engine conditions may also be erased.	3.1.1. of GTR No. 18	Use only one term for scan tool consistently Is for the scan tool reference to paragraph 3.10 correct ? Is it not sufficient to reference only paragraph 3.9. ? Check reference: is this the correct reference? 5.3.15. in section 5. General requirements
3.1.2.	Should a subsequent fuel system or misfire malfunction occur, any previously stored freeze-frame conditions shall be replaced by the fuel system or misfire conditions (whichever occurs first).	3.1.2. of 44/2014	ok
3.4.	The OBD requirements to which the vehicle is certified and the major control systems monitored by the OBD system in accordance with the specifications in paragraph 3.10. shall be made available through the serial data port on the standardised diagnostic data link connector according to the specifications in paragraph 3.8.	3.4. of GTR No. 18	ok
3.5.	The software identification number (CVN) and calibration verification number~~s~~ (Cal ID) shall be made available through the serial port on the standardised diagnostic data link connector. Both numbers shall be provided in a standardised format in accordance with the specifications in paragraph 3.10.	3.5. of GTR No. 18	to match the definitions
3.6.	The diagnostic system is not required to evaluate components during malfunction if such evaluation would result in a risk to safety or component failure. Later versions may be used at the manufacturers' discretion.	3.6. of GTR No. 18	add "Later versions may be used at the manufacturers' discretion." from R83/07 1st amendment / WLTP Reg 2017/1151
3.7.	The diagnostic system shall provide for standardised and unrestricted access to OBD information and conform with the following ISO standards or SAE specification:	3.7. of GTR No. 18	EOBD does not contain the underlined text, possibly add "information"
3.9.	Test equipment and diagnostic tools needed to communicate with OBD systems shall meet or exceed the functional specification in ISO 15031-4:2005: "Road vehicles — Communication between vehicle and external test equipment for emissions-related diagnostics — Part 4: External test equipment".	3.9. of GTR No. 18	ok
3.10.	Basic diagnostic data (as specified in paragraph 3.) and bi-directional control information shall be provided using the format and units described in ISO 15031-5:2011 "Road vehicles — Communication between vehicle and external test equipment for emissions-related diagnostics — Part 5: Emissions-related diagnostic services" and shall be available using a diagnostic tool meeting the requirements of ISO 15031-4:2005.	3.10. of GTR No. 18	Include reference to SAE EOBD R83/07 1st amendment / WLTP Reg 2017/1151 (a) ISO 15031-5 “Road vehicles - communication between vehicles and external test equipment for emissions-related diagnostics – Part 5: Emissions-related diagnostic services”, dated 1 April 2011 or SAE J1979 dated 23 February 2012;

3.10.1.	The vehicle manufacturer shall provide the approval authority with details of any diagnostic data, e.g. PIDs, OBD monitor IDs, Test IDs not specified in ISO 15031-5:2011 but relating to this Regulation.	3.10.1. of GTR No. 18	ok
3.11.	When a fault is registered, the manufacturer shall identify the fault using an appropriate ~~fault~~ diagnostic trouble code consistent with those in ISO 15031-6:2010 'Road vehicles — Communication between vehicle and external test equipment for emissions-related diagnostics — Part 6: Diagnostic trouble code definitions' relating to 'emission-related system diagnostic trouble codes'. If this is not possible, the manufacturer may use the diagnostic trouble codes of ISO DIS 15031-6:2010. Alternatively, fault codes may be compiled and reported in accordance with ISO14229:2006. The fault codes shall be fully accessible by standardised diagnostic equipment complying with point 3.9.	3.11. of 44/2014 amending Delegated Regulation on 15.12.2017	Include reference to SAE EOBD R83/07 1st amendment / WLTP Reg 2017/1151 (d) ISO 15031-6 "Road vehicles – Communication between vehicle and external test equipment for emissions related diagnostics – Part 6: Diagnostic trouble code definitions", dated 13 August 2010 or SAE J2012 dated 07 March 2013;
3.11.1.	The vehicle manufacturer shall provide to a national standardisation body the details of any emission-related diagnostic data, e.g. PID's, OBD monitor IDs ~~Id's~~, Test IDs ~~Id's~~ not specified in ISO 15031-5:2011 or ISO14229:2006, but relating to this gtr ~~Regulation~~.		ok
3.12.	The connection interface between the vehicle and the diagnostic tester shall be standardised and meet all the requirements of ISO 19689:2016'Motorcycles and mopeds — Communication between vehicle and external equipment for diagnostics — Diagnostic connector and related electrical circuits, specification and use' or ISO 15031-3:2004 'Road vehicles — Communication between vehicle and external test equipment for emissions-related diagnostics — Part 3: Diagnostic connector and related electric circuits: specification and use'. The preferred installation position is under the seating position. Any other position of the diagnostic connector shall be subject to the approval authority's agreement and be readily accessible by service personnel but protected from tampering by non-qualified personnel. The position of the connection interface shall be clearly indicated in the user manual.	3.12. of 44/2014 amending Delegated Regulation on 15.12.2017	ok

