

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA,)
)
 Plaintiff,)
)
 v.)
)
 DAIMLER AG and)
 MERCEDES-BENZ USA, LLC,)
)
 Defendants.)
 _____)

CONSENT DECREE

Civil Action Nos.: 1:20-cv-2564
 1:20-cv-2565
 (Consolidated)

PEOPLE OF THE STATE OF)
 CALIFORNIA,)
)
 Plaintiff,)
)
 v.)
)
 DAIMLER AG and)
 MERCEDES-BENZ USA, LLC,)
)
 Defendants.)
 _____)

TABLE OF CONTENTS

I.	JURISDICTION AND VENUE	4
II.	APPLICABILITY	5
III.	DEFINITIONS.....	6
IV.	CIVIL PENALTY.....	23
V.	APPROVAL OF SUBMISSIONS; U.S./EPA/CARB DECISION-MAKING.....	25
VI.	SUBJECT VEHICLE COMPLIANCE.....	28
VII.	CORPORATE COMPLIANCE.....	41
VIII.	MITIGATION	73
IX.	REPORTING REQUIREMENTS	77
X.	STIPULATED PENALTIES	86
XI.	FORCE MAJEURE	115
XII.	DISPUTE RESOLUTION	117
XIII.	INFORMATION COLLECTION AND RETENTION	121
XIV.	EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS	124
XV.	COSTS	128
XVI.	NOTICES.....	128
XVII.	EFFECTIVE DATE.....	132
XVIII.	RETENTION OF JURISDICTION.....	133
XIX.	MODIFICATION	133
XX.	TERMINATION.....	134
XXI.	PUBLIC PARTICIPATION	135
XXII.	SIGNATORIES/SERVICE.....	135
XXIII.	INTEGRATION	136
XXIV.	26 U.S.C. § 162(F)(2)(A)(II) IDENTIFICATION	137
XXV.	FINAL JUDGMENT	137
XXVI.	HEADINGS.....	137
XXVII.	APPENDICES	137

WHEREAS, Plaintiff United States of America, on behalf of the United States Environmental Protection Agency (“EPA”), is, concurrent with the lodging of this Consent Decree, filing a complaint in this action (“U.S. Complaint”), against Daimler AG and Mercedes-Benz USA, LLC (collectively, “Defendants”), alleging that Defendants violated Sections 203(a)(1), (a)(2)(A), (a)(3)(A), and (a)(3)(B) of the Clean Air Act (the “Act”), 42 U.S.C. §§ 7522(a)(1), (a)(2)(A), (a)(3)(A), and (a)(3)(B), with regard to about 250,000 Model Year (“MY”) 2009 to 2016 BlueTEC II diesel vehicles (collectively, “Subject Vehicles”).

WHEREAS, the U.S. Complaint alleges that each Subject Vehicle contains, as part of the electronic control unit (“ECU”), certain software functions and calibrations that cause the emission control system of those vehicles to perform differently during normal vehicle operation and use than during emissions testing. The U.S. Complaint alleges that these software functions and calibrations are undisclosed “Auxiliary Emission Control Devices” (“AECDs”) in violation of the Act and that some of these software functions and calibrations are also prohibited Defeat Devices under the Act. The U.S. Complaint also alleges that during normal vehicle operation and use, the Subject Vehicles emit increased levels of oxides of nitrogen (“NO_x”). The U.S. Complaint alleges and asserts claims for relief related to the presence of the undisclosed AECDs and Defeat Devices in the Subject Vehicles.

WHEREAS, Plaintiff the People of the State of California, acting by and through Xavier Becerra, Attorney General of the State of California (“the California Attorney General”), and the California Air Resources Board (“CARB”), are concurrently with the lodging of this Consent Decree filing a complaint in this action (the “California Complaint”), against Defendants. In the California Complaint, CARB alleges that Defendants violated certain provisions of California law, including without limitation California Health and Safety Code sections 43016, 43106,

43151, 43152, 43153, 43205, 43211, and 43212; 13 C.C.R. §§ 1961, 1961.2, 1965, 1968.2, and 2037; and 42 U.S.C. § 7604 and 40 C.F.R. § 54.3 with regard to 36,946 Model Year 2009 to 2016 BlueTEC II diesel vehicles (a subset of “Subject Vehicles”). For his part, the California Attorney General alleges that Defendants, through their violation of the sections of California Health and Safety Code and Code of Regulations pled by CARB, engaged in unlawful business acts or practices, within the meaning of California Business and Professions Code § 17200 et seq.

WHEREAS, the California Complaint alleges, among other things, that the Subject Vehicles contain undisclosed AECDs and prohibited Defeat Devices, as well as several unreported, unapproved running changes and field fixes, that have resulted in, and continue to result in, increased NO_x emissions from each Subject Vehicle significantly in excess of California limits.

WHEREAS, Defendants deny the allegations in the Complaints and do not admit any liability to the United States, California, or otherwise arising out of or in connection with the allegations in the Complaints.

WHEREAS, in 2017 and 2018, EPA and CARB certified that the configuration of software and calibrations installed in the 6-cylinder Sprinters for MYs 2017 and 2018, respectively, complied with the requirements of the Clean Air Act and, as to CARB, also with California law.

WHEREAS, Defendants will update the configuration of software and calibrations in the Eligible Vehicles in Emission Modification Categories 1 and 2 with the MY17/18 Sprinter certified configuration, and will make certain changes in the hardware, as listed in Appendix B,

Attachment I, to each Eligible Vehicle in Emission Modification Categories 1 and 2, consistent with the MY17/18 Sprinters.

WHEREAS, Defendants will update the configuration of hardware, software, and calibrations in the Eligible Vehicles in Emission Modification Category 9 (4-cylinder GLK 250s) as listed in Appendix B, Attachment I. The Defendants made these updates on an Emission Test Vehicle for Emission Modification Category 9, and conducted testing prior to lodging this Consent Decree in accordance with an agreed-upon protocol with EPA/CARB, as set forth in Appendix B.

WHEREAS, Defendants will update the configuration of hardware, software, and calibrations in the Eligible Vehicles in the other Emission Modification Categories as listed in Appendix B, Attachment I.

WHEREAS, based upon the results of the aforementioned testing of Emission Modification Category 9 and the accompanying Updated AECD Document, and based upon required testing pursuant to this Consent Decree for the other Emission Modification Categories, EPA/CARB consider the updates to the Eligible Vehicles set forth in this Consent Decree, together with the other terms set forth in this Consent Decree, to be an appropriate remedy for, and to resolve in full, the allegations in the U.S. and California Complaints, as set forth in Section XIV below.

WHEREAS, the Parties recognize, and the Court by entering this Consent Decree finds, that the United States and CARB are not issuing new Certificates of Conformity or Executive Orders, respectively, for the Subject Vehicles, nor are they revoking the existing Certificates of Conformity or Executive Orders for the Subject Vehicles.

WHEREAS, this Consent Decree is being filed during the COVID-19 pandemic, and all Parties are mindful of the health and safety of the public and of their respective employees, and cognizant of potential and uncertain impacts on work due to travel and social distancing restrictions implemented to limit the spread of COVID-19 during the pandemic, and take these important considerations into account, as described in Paragraph 65 of this Consent Decree.

WHEREAS, the Parties recognize, and the Court by entering this Consent Decree finds, that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation among the Parties regarding the claims alleged in the Complaints, and that this Consent Decree is fair, reasonable, and in the public interest.

NOW, THEREFORE, before the taking of any testimony, without the adjudication or admission of any issue of fact or law and with the consent of the Parties, IT IS HEREBY ADJUDGED, ORDERED, AND DECREED as follows:

I. JURISDICTION AND VENUE

1. This Court has jurisdiction over the subject matter of this action, pursuant to 28 U.S.C. §§ 1331, 1345, and 1355, and Sections 203, 204, and 205 of the Act, 42 U.S.C. §§ 7522, 7523, and 7524, and over the Parties. Venue lies in this District pursuant to 28 U.S.C. § 1391 (b), (c). The Court has supplemental jurisdiction over the California State law claims pursuant to 28 U.S.C. § 1367. For purposes of this Consent Decree, or in any action to enforce this Consent Decree, the Parties agree to and Defendants consent to this Court's jurisdiction over this Consent Decree and over any action to enforce this Consent Decree, and over Defendants, and consent to venue in this judicial district. Defendants reserve the right to challenge and oppose any claims to jurisdiction that do not arise from the Court's jurisdiction over this Consent Decree or an action to enforce this Consent Decree.

2. For purposes of this Consent Decree only, Defendants agree that the U.S. Complaint states claims upon which relief may be granted pursuant to Sections 203, 204, and 205 of the Act, 42 U.S.C. §§ 7522, 7523, and 7524, and that the California Complaint states claims upon which relief may be granted pursuant to California Health and Safety Code sections 43016, 43106, 43151, 43152, 43153, 43205, 43211, and 43212; California Business and Professions Code § 17200 et seq.; 13 C.C.R. §§ 1961, 1961.2, 1965, 1968.2, and 2037; and 42 U.S.C. § 7604 and 40 C.F.R. § 54.3.

II. APPLICABILITY

3. The obligations of this Consent Decree apply to and are binding upon the United States and California, and upon Defendants and any successors, assigns, or other entities or persons otherwise bound by law.

4. No transfer of ownership or operation, whether in compliance with the procedures of this Paragraph or otherwise, shall relieve Defendants of their obligation to ensure that the terms of this Consent Decree are implemented. At least 30 Days prior to such transfer, Defendants shall provide a copy of this Consent Decree to the proposed transferee and shall simultaneously provide written notice of the prospective transfer, together with a copy of the proposed written agreement, to the United States and CARB, in accordance with Section XVI (Notices). Notwithstanding the foregoing, the provisions of this Paragraph do not apply to a transfer of ownership or operations between or among Daimler group companies.

5. Defendants shall provide a copy of this Consent Decree to the members of their respective Board of Management and/or Board of Directors and to their officers and executives whose duties might reasonably include compliance with, or oversight over compliance with, any provision of this Consent Decree. Defendants shall also ensure that any contractors retained to

perform work required under the material terms of this Consent Decree, agents, or employees whose duties might reasonably include compliance with any provision of this Consent Decree are made aware of those requirements relevant to their performance. Defendants shall undertake reasonable best efforts to condition any such contract upon performance of the work in conformity with the terms of this Consent Decree.

6. In any action to enforce this Consent Decree, Defendants shall not raise as a defense the failure by any of their respective officers, directors, employees, agents, or contractors to take any actions necessary to comply with the provisions of this Consent Decree, except in accordance with the provisions of Section XI (Force Majeure), below.

III. DEFINITIONS

7. Capitalized terms used in this Consent Decree that are defined in the Act or in regulations promulgated pursuant to the Act shall have the meanings assigned to them in the Act or such regulations, unless otherwise provided in this Consent Decree. Likewise, where context-appropriate, capitalized terms that are defined in the California Health and Safety Code or in CARB regulations promulgated pursuant to the California Health and Safety Code shall have the meanings assigned to them in the California Health and Safety Code or such regulations, unless otherwise provided in this Consent Decree. Capitalized terms that are defined in this Consent Decree are defined for purposes of this Consent Decree only and are not defined or applicable for any other purpose. Whenever the capitalized terms set forth below are used in this Consent Decree, the following definitions shall apply:

“20° F FTP” means the FTP conducted at 20° Fahrenheit, as specified in 40 C.F.R. Part 1066, Subpart H.

“Aftertreatment System” or “ATS,” for purposes of Section XI (Force Majeure) and Appendix B, Paragraph 1.e only, means the exhaust system consisting of the diesel oxidation catalyst (DOC), diesel particulate filter (DPF), SCR catalyst,

exhaust temperature sensors, the PM Sensor (where equipped), one NO_x Sensor upstream from the SCR catalyst, and one NO_x Sensor downstream from the SCR catalyst.

“Air Pollution Control Fund” means the fund established by California Health and Safety Code section 43015.

“Approved Emission Modification” means an emission modification submitted by Defendants pursuant to Appendix B, Paragraph 4 and approved by EPA/CARB pursuant to Appendix B, Paragraph 5.a.

“Audit Plan” means the annual plan in which the PSAT will identify topics for internal audit.

“Audit Report” means the report produced by the PSAT after the completion of the audit year, *i.e.*, after completion of the final audit in a series of audits within a designated year.

“Audit Committee of the Supervisory Board” means the committee consisting of four Supervisory Board members elected by a majority vote, which, among other duties, oversees Corporate Audit and external auditors.

“Auxiliary Emission Control Device” or “AECD” has the meaning set forth in 40 C.F.R. § 86.1803-01.

“Bench-aged” means aging that is conducted pursuant to Appendix B, Paragraph 1.e.i.

“Board of Management” or “BoM” means the managerial board of Daimler AG, which is responsible for directing, coordinating, and controlling business activities in accordance with the goals it defines for Daimler in the best interests of the Company.

“Business Day” means a calendar day that does not fall on a Saturday, Sunday, or federal or California holiday. In computing any period of time under this Consent Decree, where the last Day would fall on a Saturday, Sunday, or federal or California holiday, the period shall run until the close of business of the next Business Day.

“Business Partner Integrity Management” means Daimler’s program regarding business partner integrity and compliance.

“Business Practices Office” or “BPO” means Daimler’s central whistleblower system.

“Buyback,” for purposes of Appendix A, Paragraph 18.j only, means the return of an Eligible Vehicle by an Eligible Owner to Defendants, in exchange for a payment that equals or exceeds the National Automobile Dealers Association (“NADA”) Clean Retail value of the Eligible Vehicle (adjusted for options, mileage, and NADA region in accordance with the then-current NADA guide) as of January 1, 2020.

“CA AG” means the California Attorney General’s Office and any of its successor departments or agencies.

“CALID” means calibration identification for the software installed on any ECU as part of the Approved Emission Modification.

“California” or “CA” means the People of the State of California, acting by and through the California Air Resources Board, and where it is used to refer to specific statutes or regulations only, it means the State of California.

“California Attorney General” means the California Attorney General’s Office and any of its successor departments or agencies.

“California Complaint” means the complaint filed by California in this action.

“California Passenger Vehicle EMP Rate” means the 85 percent rate for Passenger Vehicles in California specified in Appendix A, Paragraph 4.

“California Sprinter EMP Rate” means the 85 percent rate for Sprinters in California specified in Appendix A, Paragraph 4.

“CARB” means the California Air Resources Board and any of its successor departments or agencies.

“CBP” means the United States Customs and Border Protection and any of its successor departments or agencies.

“CDCS” means Consolidated Debt Collection System.

“CDX” means Central Data Exchange, the EPA’s electronic reporting site which can be found at https://cdx.epa.gov/epa_home.asp.

“Central Powertrain Controller” or “CPC” means the electronic hardware device, together with the software and calibrations installed on the device, that links other control units, such as the ECU and TCU, to the rest of the vehicle and, in conjunction with other control units, controls the vehicle powertrain.

“Certificate of Conformity” means the document that EPA issues to a vehicle manufacturer to certify that a vehicle class conforms to EPA requirements.

“Class 1 Additional OBD Noncompliance” means the OBD Noncompliances described in Paragraph 53.c.ii.A.

“Class 2 Additional OBD Noncompliance” means the OBD Noncompliances described in Paragraph 53.c.ii.B.

“Class Action Settlement” means a consumer class action settlement agreement and release filed in *In re Mercedes-Benz Emissions Litig.*, 2:16-cv-00881 (D.N.J.), by attorneys representing owners and lessees of Subject Vehicles. If a court issues an order granting final approval of a proposed consumer class action settlement agreement and release in *In re Mercedes-Benz Emissions Litig.*, 2:16-

cv-00881 (D.N.J.), “Class Action Settlement” means that agreement as and in the form it is ultimately approved and entered by the court.

“Clean Air Act” or “Act” means 42 U.S.C. §§ 7401–7671q.

“Clearing Case” means a question or topic submitted into and resolved through the cross-functional decision-making process.

“CO” means carbon monoxide.

“CO₂” means carbon dioxide.

“Combined Uphill/Downhill and Highway Route” means the driving route shown and described in Appendix B, Attachment D.

“Committee for Legal Affairs of the Daimler AG Supervisory Board” or “Committee for Legal Affairs” means the special committee of the Daimler AG Supervisory Board, which will direct and supervise the PSAT and retain the ECC.

“Complaints” means the U.S. Complaint and the California Complaint.

“Compliance Awareness Modules” or “CAM” means the integrity and compliance awareness modules provided to Daimler business partners.

“Compliance Board” means the committee led by the Chief Compliance Officer and comprising of the responsible individual for each compliance field as well as the responsible individual for Compliance Management Systems & Processes and Legal Digital Transformation Strategy, which governs Daimler’s compliance strategy and steers and harmonizes overarching compliance activities.

“Compliance Management System” or “CMS” means Daimler’s overall compliance management system.

“Confidential Business Information” or “CBI” means information protected under 40 C.F.R. Part 2 and/or comparable California law, including California Government Code § 6254(k) and 17 C.C.R. §§ 91000 et seq.

“Consent Decree” or “Decree” means this Consent Decree and all Appendices and Attachments attached hereto.

“Consumer Emission Modification Disclosure” means the disclosure to all affected Eligible Owners and Eligible Lessees required pursuant to Appendix A, Paragraph 15.

“Cooling Phase” means the period of operation in which the ATS is returned to normal operating temperature and shall last for at least the number of seconds specified in the Updated AECD Document for Emission Modification Category 9.

“Corporate Audit” means the independent and objective Company-wide assurance function of Daimler and its affiliates.

“Curb Weight” has the meaning set forth in 40 C.F.R. § 86.1803-01.

“CVN” means calibration verification number for the software installed on any ECU as part of the Approved Emission Modification.

“Date of Lodging” means the date this Consent Decree is filed for lodging with the Court.

“Day” means a calendar day, unless expressly stated to be a Business Day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday, Sunday, or federal or California holiday, the period shall run until the close of business of the next Business Day.

“Dealer” means any entity authorized by MBUSA or DVUSA, subject to a written dealer agreement, to sell and/or service Subject Vehicles in the United States.

“Dealer Emission Modification Disclosure” means the disclosure to all Dealers required pursuant to Appendix A, Paragraph 17.

“Defeat Device” has the meaning provided under 40 C.F.R. § 86.1803-01 and 42 U.S.C. § 7522(a)(3)(B).

“Defendants” means the entities named in the U.S. Complaint and California Complaint, specifically, Daimler AG and Mercedes-Benz USA, LLC.

“Deterioration Factor” or “DF” means the number, determined pursuant to 40 C.F.R. § 86.1823-08, that represents the change in emissions performance during a vehicle’s Full Useful Life.

“Diesel Exhaust Fluid” or “DEF” means a liquid reducing agent used in conjunction with selective catalytic reduction to reduce NO_x emissions. DEF is generally understood to be an aqueous solution of urea conforming to the specification of ISO 22241.

“Diesel Oxidation Catalyst System” or “DOC System” means all hardware, components, parts, sensors, subassemblies, software, AECs, calibrations, and other elements of design that collectively constitute the system for, among other things, controlling emissions of carbon monoxide and hydrocarbons, together with other pollutants, through a chemical reaction accelerated by an oxidation catalyst.

“Diesel Particulate Filter System” or “DPF System” means all hardware, components, parts, sensors, subassemblies, software, AECs, calibrations, and other elements of design that collectively constitute the system for, among other things, controlling emissions of particulate matter by trapping such particulates in a filter and periodically oxidizing them through thermal regeneration of the filter.

“Dosing Control Unit” or “DCU” means the electronic hardware device, together with the software and calibrations installed on the device, that controls, among other things, the operation of the DEF dosing system in the Subject Vehicles.

“DPF Regeneration Event” means an event triggered by the ECU that increases exhaust temperature for a limited time period to oxidize particulate matter collected on and within the diesel particulate filter.

“Drivability” means the combination of agile and smooth delivery of power, as demanded by the driver or operator.

“DVUSA” means Daimler Vans USA, LLC.

“E1” means executive level employee directly reporting to a BoM member.

“E2” means senior manager-level employee.

“E3” means manager-level employee, senior to E4.

“E4” means manager-level employee.

“Effective Date” or “Date of Entry” means the date upon which this Consent Decree is entered by the Court or a motion to enter this Consent Decree is granted, whichever occurs first, as recorded on the Court’s docket.

“Effectiveness Evaluation” means the annual process by which Daimler evaluates the effectiveness of the various aspects of its compliance management systems.

“Eligible Lessee” means (1) the current lessee or lessees of an Eligible Vehicle with an active lease as of the date the Eligible Vehicle receives the Approved Emission Modification; or (2) solely for purposes of any applicable Extended Modification Warranty, the subsequent lessee or lessees of an Eligible Vehicle that has received the Approved Emission Modification.

“Eligible Owner” means the (1) owner or owners of an Eligible Vehicle on the day that the Eligible Vehicle receives or is eligible to receive the Approved Emission Modification or (2) solely for purposes of any applicable Extended Modification Warranty, the subsequent owner or owners of an Eligible Vehicle that has received the Approved Emission Modification.

“Eligible Vehicle” means any vehicle in an Emission Modification Category identified in Appendix B, Attachment I that is (1) registered with a state Department of Motor Vehicles or equivalent agency or held by a Dealer or unaffiliated dealer and located in the United States or its territories; and (2) Operable as of the date the vehicle is brought in for the Approved Emission Modification.

“Emission Control System” has the meaning set forth at 40 C.F.R. § 86.1803-01, and at “California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,” Part I: C.3.3.2 and “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and

Medium-Duty Vehicles,” Part I: C.3.3.2, the latter two of which are incorporated by reference in 13 C.C.R. §§ 1961 & 1961(d).

“Emission Control System Extended Modification Warranty” means the warranty provided in Appendix A, Paragraph 18.a.

“Emission-Related” means, for the purpose of Section VII (Corporate Compliance), hardware that is included on the Emission-Related Parts List described in Section VII, Paragraph 30.h.ii or ECU, TCU, DCU, or CPC software or software calibrations.

“Emission Modification Category” means one of the 12 categories of Models and Model Years as identified in the sixth column of Appendix B, Attachment I.

“Emission Modification Configuration” means the update(s) to the Subject Vehicles in an Emission Modification Category, pursuant to the process outlined in Appendix B.

“Emission Modification Database” means a searchable database that Defendants make available online for a minimum of ten years, by which users may conduct a free-of-charge search by vehicle VIN to determine the information required pursuant to Appendix A, Paragraphs 16.c and 16.d.

“Emission Modification Proposal Report” means the report specified in Appendix B, Paragraph 4.a.

“Emission Modification Program” means the program specified in Appendix A, Paragraph 1.

“Emission Standard” means the FUL emission standard specified in the fourth column of Appendix B, Attachment I for the given row. If EPA/CARB approve a proposed Emission Modification Configuration that meets the Emission Standard First Threshold or Emission Standard Upper Threshold, then where this Consent Decree, Test Protocol and other Appendices and Attachments use the term, “Emission Standard,” that term shall be replaced with Emission Standard First Threshold or Emission Standard Upper Threshold, as relevant for the AEM for that Emission Modification Category.

“Emission Standard First Threshold” means the FUL emission standard, as follows: Emission Modification Categories 4–8 and 11–12: Tier 2, Bin 6, as set forth in 40 C.F.R. § 86.1811-04(c)(6), Tier 2, LDT4, as set forth in 40 C.F.R. § 86.1811-04(f), Highway NO_x exhaust emission standard, as set forth in 40 C.F.R. § 86.1811-04(j), and LEV II ULEV, as set forth in 13 C.C.R. § 1961.

“Emission Standard Upper Threshold” means the FUL emission standard, as follows:

- (1) Emission Modification Categories 4–8 and 11–12: Tier 2, Bin 7, as set forth in 40 C.F.R. § 86.1811-04(c)(6), Tier 2, LDT4, as set forth in 40 C.F.R. § 86.1811-04(f), Highway NO_x exhaust emission standard, as

set forth in 40 C.F.R. § 86.1811-04(j), and LEV II ULEV, as set forth in 13 C.C.R. § 1961.

(2) Emission Modification Category 10: Tier 3, Bin 160, as set forth in 40 C.F.R. § 86.1811-17(b), Highway NO_x exhaust emission standard, as set forth in 40 C.F.R. § 86.1811-17(c), and LEV III LEV 160, as set forth in 13 C.C.R. § 1961.2.

“Emission Plus Test Vehicles” or “EPTV” means the Test Vehicles listed in Appendix B, Attachment A, Table 1.

“Emission Plus Test Vehicle 1” or “EPTV 1” means the Emission Plus Test Vehicle tested for the emission, special cycle, and PEMS tests pursuant to Appendix B, Paragraph 2.b.

“Emission Plus Test Vehicle 2” or “EPTV 2” means the Emission Plus Test Vehicle tested for the A-to-B fuel economy testing pursuant to Appendix B, Paragraph 2.c.i, and the A-to-B NVH and A-to-B Drivability testing pursuant to Appendix B, Paragraphs 2.c.ii and 2.c.iii, unless a third vehicle, Emission Plus Test Vehicle 3, is tested for the A-to-B NVH and A-to-B Drivability testing.

“Emission Plus Test Vehicle 3” or “EPTV 3” means an additional Emission Plus Test Vehicle that may be tested for the A-to-B NVH and the A-to-B Drivability testing pursuant to Appendix B, Paragraphs 2.c.ii and 2.c.iii.

“Engine Control Unit” or “ECU” means an electronic hardware device, together with the software and calibrations installed on the device, that controls, among other things, the operation of the Emission Control System in the Subject Vehicles.

“Engineering Practices Board” or “EPB” means the committee consisting of mainly E1-level representatives from IL/P, R&D, Certification, tCMS R&D, Communications, and External Affairs which considers issues escalated from the TCC.

“EPA” means the United States Environmental Protection Agency and any of its successor departments or agencies.

“EPA/CARB” means EPA and CARB jointly, or EPA or CARB, as applicable.

“ETK” means a development tool that includes the functions of an ECU and is an abbreviation for “Emulator Tast Kopf.”

“Exhaust Gas Recirculation System” or “EGR System” means all hardware, components, parts, sensors, subassemblies software, AECDs, calibrations, and other elements of design that collectively constitute the system for recirculating gas from the engine’s exhaust manifold into the pipe in front of the intake manifold of the engine.

“Executive Order” means an order issued by CARB to certify a particular MY test group in combination with one or more evaporative families that meets CARB

regulatory requirements for importation into and entry into commerce in California.

“Extended Modification Warranty” means the extended warranty specified in Appendix A, Paragraph 18.

“Extended Warranty Period” means the warranty period defined at Appendix A, Paragraph 18.b.

“External Compliance Consultant” or “ECC” means the external individual retained by the Committee for Legal Affairs to advise and assist the Committee for Legal Affairs as it directs and supervises the PSAT.

“Flat File” means a comprehensive file that consists of a series of rows of test records organized in columns of test parameters or variables from dynamometer or portable emission measurement system (PEMS) tests. The unique records are identified in a tabular format by test vehicle, test ID, test type (for dynamometer) or route (for PEMS), and phase number (for dynamometer) or route segment (for PEMS). The tabular file is to be provided in Excel format.

“FLU” means the Financial Litigation Unit of the United States Attorney’s Office.

“FTP 72” or “Urban Dynamometer Driving Schedule” or “UDDS” means the drive cycle set forth at 40 C.F.R. Part 86, Appendix I (Dynamometer Schedules).

“FTP 72 Prep Cycle” means a single FTP 72 drive cycle.

“Federal Test Procedure” or “FTP75” means the emission test cycle described in 40 C.F.R. § 86.135-12 and the procedures set forth at 40 C.F.R. §§ 1066.810–1066.820.

“Full Useful Life” or “FUL” has the meaning set forth in 40 C.F.R. § 86.1805-12.

“Functional Group Leader” means an experienced engineer with expertise regarding certain functions who serves as an expert contact for questions, assists with data checks, and confirms compliance of functionalities.

“Gross Vehicle Weight” or “GVW” has the meaning set forth in 40 C.F.R. § 86.1803-01.

“Gross Vehicle Weight Rating” or “GVWR” has the meaning set forth in 40 C.F.R. § 86.1803-01.

“Group Risk Management Committee” or “GRMC” means the committee which evaluates risk to Daimler. The GRMC consists of representatives from the Accounting & Financial Reporting, Legal, Compliance, Legal Product & Technical Compliance, Corporate & Data Security departments, and CFOs of Mercedes-Benz AG, Daimler Truck AG, and Daimler Mobility AG. It is chaired by the BoM Member for Finance & Controlling and the BoM Member for Integrity and Legal Affairs of Daimler AG. Corporate Audit participates in the

GRMC and delivers material findings on the Internal Control and Risk Management System.

“Heavy Duty Vehicle” or “HDV” has the meaning set forth in 40 C.F.R. § 86.1803-01.

“Highway Fuel Economy Test” or “HWFET” means the emission test cycle described in 40 C.F.R. § 600.109-08(b) and Appendix I (Highway Fuel Economy Driving Schedule) to Part 600 and the procedure described in 40 C.F.R. § 1066.840.

“Hydraulic Control Unit” or “HCU” means the electronic and hydraulic hardware device which consists of the hydraulic switch plate, the Transmission Control Unit, and the electromagnetic valves to control, among other things, the hydraulic pressure for the operation of the transmission in the Subject Vehicles.

“Include” and “Including,” as used in this Consent Decree and accompanying Appendices and Attachments, are not limiting terms.

“Infopoint Integrity” means the central hotline accessible Company-wide to all employees, serving as a point of contact for all integrity issues, including questions on technical compliance.

“Infrequent Regeneration Adjustment Factor” or “IRAF” means the additive or upward adjustment factor for each pollutant used to account for increased emissions caused by periodic regeneration of any aftertreatment device. The increased emissions caused by such events are accounted for by adjustment factors, or IRAFs, for the pollutants NMOG, NO_x, CO, and PM, as applicable.

“Inspection and Maintenance Mandatory Recall Noncompliance” means the OBD Noncompliances described in Paragraph 53.c.v.

“Integrity and Legal Affairs” or “IL” mean overarching BoM responsibility for legal, integrity, and compliance.

“In-Use Group 1” means, for the purpose of in-use testing pursuant to Paragraph 19.b, Emission Modification Category 1.

“In-Use Group 2” means, for the purpose of in-use testing pursuant to Paragraph 19.b, Emission Modification Categories 9, 10, 11, and 12.

“In-Use Group 3” means, for the purpose of in-use testing pursuant to Paragraph 19.b, Emission Modification Category 3.

“In-Use Group 4” means, for the purpose of in-use testing pursuant to Paragraph 19.b, Emission Modification Categories 4 and 5.

“In-Use Group 5” means, for the purpose of in-use testing pursuant to Paragraph 19.b, Emission Modification Categories 7 and 8.

“IT” means information technology.

“IUCP” means the in-use confirmatory test plan described in Paragraph 19.b.

“IUCP Vehicles” means vehicles that meet the requirements of Paragraph 19.b.iii.

“IUVT Vehicles” means vehicles that meet the requirements of Paragraph 19.b.i.

“Lease Termination” means, for purposes of Appendix A, Paragraph 18.j only, the return of an Eligible Vehicle by an Eligible Lessee to the lessor, at no cost to the Eligible Lessee and with full cancellation of the remaining terms of the lease with no financial or other penalty, under terms specified in Appendix A, Paragraph 18.j.

“Legal Product & Technical Compliance” or “IL/P” mean the department consisting of lawyers, engineers, and business experts, which designs and develops tCMS elements, participates in the cross-functional decision-making process, conducts independent second-line testing of tCMS controls, and provides Daimler-wide tCMS monitoring and improvement initiatives.

“Light Duty Truck” or “LDT” has the meaning set forth in 40 C.F.R. § 86.1803-01.

“Light Duty Vehicle” or “LDV” has the meaning set forth in 40 C.F.R. § 86.1803-01.

“Low-Emission Vehicle III” or “LEV III” means the LEV III emission standards in 13 C.C.R. § 1961.2 and the incorporated test procedures (incorporated by reference in 40 C.F.R. § 86.1(d)(1)(i)).

“Malfunction” means a circumstance where a Test Vehicle experiences a mechanical or electrical problem, including as the result of damage or accident, that (1) renders the vehicle inoperable, (2) presents a safety or environmental hazard if the vehicle continues to be operated (such as an oil leak), or (3) causes an OBD event (for example, recording a pending fault code or illuminating the MIL), except for the following OBD events: (a) OBD events during OBD demonstration testing, (b) DEF/fuel tank level sloshing diagnostics (P21C5), and (c) false detection or MIL illumination due to chassis dynamometer simulation testing, unless such false detection or MIL illumination causes a default action or default strategy that changes the emission performance behavior.

“Materials” means Submissions and other documents, certifications, plans, reports, notifications, statements of position, data, or other information required by or submitted pursuant to this Consent Decree.

“Mercedes-Benz USA, LLC” or “MBUSA” means the U.S. division of Mercedes-Benz Cars.

“Mercedes-Benz Research & Development North America, Inc.” or “MBRDNA” means the North American research and development-related service provider for Mercedes-Benz Cars.

“MIL” means the malfunction indicator light of the OBD system outlined in 13 C.C.R. § 1968.2 that illuminates to notify the vehicle operator of detected malfunctions.

“Mileage” means vehicle mileage recorded on the odometer.

“Model” has the meaning set forth in 40 C.F.R. § 600.002 for “Model type.”

“Modified Eligible Vehicle” means an Eligible Vehicle that has received an Approved Emission Modification.

“MPG” means miles per gallon.

“Model Year” or “MY” has the meaning set forth in 40 C.F.R. § 600.002.

“MY16 Six-Cylinder GLE 350ds” means the six OM642 (6-cylinder) MY16 GLE 350d vehicles with VINs 4JGDA2EB1GA598863, 4JGDA2EB8GA755062, 4JGDA2EB7GA754985, 4JGDA2EB3GA755003, 4JGDA2EB0GA754794, and 4JGDA2EBXGA754916 that Defendants sold or offered for sale in, or introduced or delivered for introduction into commerce in the United States, or imported into the United States.

“MY17/18 Sprinters” means the OM642 (6-cylinder) Sprinters that were issued final Certificates of Conformity HMBXD03.0HD1-034-R01, HMBXD03.0HD2-035, HMBXD03.0HD3-036, HMBXD03.0HD4-037, JMBXD03.0HD1-030, JMBXD03.0HD2-031, JMBXD03.0HD3-032, JMBXD03.0HD4-033-R01 in Model Years 2017 and 2018 and issued Executive Orders A-003-0591-1, A-003-0592-1, A-003-0593-1, A-003-0594-1, A-003-0630, A-003-0631, A-003-0632, and A-003-0633.

“NHTSA” means the National Highway Traffic Safety Administration.

“National Passenger Vehicle EMP Rate” means the 85 percent nationwide rate for Passenger Vehicles specified in Appendix A, Paragraph 4.

“National Sprinter EMP Rate” means the 85 percent nationwide rate for Sprinters specified in Appendix A, Paragraph 4.

“Neutral Intermediary” means an independent external attorney available to receive reports to the BPO in Germany.

“Noise, Vibration, and Harshness” or “NVH” means a measure of the noise level heard during driving and in idle, the vibrations felt during driving and in idle, and the acoustic harshness (which is the transition area between tactile vibration and hearable noise) of the ride of the vehicle.

“NMHC” means “non-methane hydrocarbons,” *i.e.*, the sum of all hydrocarbon species except methane.

“Normal Mode” means the period of operation in which the ATS is operated at temperatures consistent with normal vehicle operation and shall last for at least

the number of seconds specified in the Updated AECD Document for Emission Modification Category 9.

“NO_x” means oxides of nitrogen, *i.e.*, the sum of the nitric oxide and nitrogen dioxide contained in a gas sample as if the nitric oxide were in the form of nitrogen dioxide.

“NO_x Sensor(s)” means a sensor located in a vehicle’s exhaust system which directly or indirectly measures NO_x or related characteristics.

“On-board Diagnostic System” or “OBD System” means all hardware, components, parts, sensors, subassemblies, software, AECDs, calibrations, and other elements of design that collectively constitute the system for monitoring all systems and components that must be monitored pursuant to the version of 13 C.C.R. § 1968.2 applicable at the time of certification for the particular Model Year of a Subject Vehicle, for the purpose of identifying and detecting malfunctions of such monitored systems and components, and for alerting the driver of such potential malfunctions by illuminating the MIL.

“OBD Clusters” means the groupings of the Subject Vehicles as identified in the eighth column of Appendix B, Attachment I.

“OBD Demonstration Vehicle” means the Test Vehicles listed in Appendix B, Attachment A, Table 2.

“OBD Infrequent Regeneration Adjustment Factor” or “OBD IRAF” mean the additive or upward adjustment factor for each pollutant used to account for increased emissions caused by periodic regeneration of any aftertreatment device or strategies activated for monitoring faulty components of the control system in order to adjust the emissions results used to determine the malfunction criterion for monitors that are required to indicate a malfunction before emissions exceed the applicable emission threshold.

“OBD Noncompliance” means any of the following terms, as relevant in the context of the Paragraph: Pre-Approved OBD Noncompliances, Class 1 Additional OBD Noncompliances, Class 2 Additional OBD Noncompliances, Section 1968.5 OBD Noncompliances, or Unreported OBD Noncompliances.

“OBD Summary Table” means the table submitted by Defendants to EPA and CARB pursuant to Appendix B, Paragraph 4.a.i.E and that complies with the version of 13 C.C.R. § 1968.2(i)(2.2) applicable at the time of certification for the particular Model Year of a Subject Vehicle. For Emission Modification Categories 1 to 5 and 9, it must include a revised OBD Summary Table for the OBD Cluster associated with the Emission Modification Category that identifies in redline the changes in the OBD system from the certified configuration due to the proposed Emission Modification Configuration, or, if there are no material changes to the OBD system, it must provide a statement that there are no material changes and the basis for this conclusion. The revised OBD Summary Table for Emission Modification Categories 1 to 5 shall be in a format comparable to that

included in the revised OBD Summary Table for Emission Modification Category 9.

“Operable” means that a vehicle so described can be driven under its own engine power.

“Paragraph” means a portion of this Consent Decree or any Appendices attached hereto identified by an Arabic numeral. Unless a subsidiary Paragraph is otherwise specified, if a Paragraph is cross-referenced, the cross-reference shall include all subsidiary Paragraphs (*e.g.*, Paragraph 1, 1.a, 1.b, 1.b.i, 1.b.i.A, 1.c, *etc.*).

“Particulate Matter” or “PM” means particulates formed during the diesel combustion process and measured by the procedures specified in 40 C.F.R. Part 86, Subpart B.

“Particulate Matter Sensor” or “PM Sensor” means a sensor located in a vehicle’s exhaust system which directly or indirectly measures Particulate Matter or related characteristics.

“Parties” means the United States, California, and Defendants.

“Passenger Vehicles” means the vehicles in Emission Modification Categories 4–12.

“Payment Transmittal Form” means the form provided by CARB to the addressee listed in Paragraph 10 after the Effective Date of this Consent Decree, to accompany payments made to CARB.

“Personal Information” means (1) information specifically identifying, by reference to name, initials, telephone number, fax number, email, unique position or office, home address, or identification number, an employee of Daimler AG or any of its subsidiaries, except a subsidiary that is incorporated in or has its principal place of business in the United States, and (2) specific information about the health or family status of such an employee. Personal Information shall not include: (1) any information that directly relates to a violation of the terms of this Consent Decree; (2) any information that an employee has agreed may be processed and transferred to Plaintiffs by Daimler AG or any of its subsidiaries as part of that individual’s employment agreement, including any collective employment agreements that include such individual; or (3) any information that an employee has otherwise consented may be processed and transferred to Plaintiffs by Daimler AG or any of its subsidiaries.

“Plaintiffs” means the United States and California.

“Portable Emissions Measurement System” or “PEMS” means an emissions measurement system that complies with the field testing specifications of 40 C.F.R. Part 1065, Subpart J, and that measures emissions while a vehicle is driven on the road.

“Post-Settlement Audit Team” or “PSAT” mean the audit department, located within Corporate Audit, consisting of audit teams dedicated specifically to environmental compliance and tCMS, which will conduct internal audits under this Consent Decree.

“Pre-Approved OBD Noncompliance” mean the OBD Noncompliances described in Appendix B, Paragraph 2.f.i.A and Attachment L, and in Paragraph 53.c.i.

“Project Future” means the restructuring plan under which Daimler AG has become the publicly listed parent company of three legally independent entities—Mercedes-Benz AG (including business units Mercedes-Benz Cars and Mercedes-Benz Vans), Daimler Truck AG (including business units Daimler Trucks and Daimler Buses), and Daimler Mobility AG (formerly Daimler Financial Services AG). Daimler AG will perform governance, strategy, and management functions as well as provide Company-wide services.

“PVE” means production vehicle evaluation, which is testing conducted in accordance with the requirements of 13 C.C.R. § 1968.2(j) (2016), as modified by Appendix B.

“QA/QC Reports” or “Quality Assurance/Quality Control Reports” mean records describing actions, measures, and steps taken to ensure the reliability and validation of the data and testing conducted under Appendix B to this Consent Decree. For emissions and fuel economy testing conducted pursuant to Appendix B, the QA/QC Reports will document compliance with 40 C.F.R. Part 1066; for OBD testing conducted pursuant to Appendix B, the QA/QC Reports will document compliance with 40 C.F.R. Part 86.

“Quality Management Department” or “QM” means the department responsible for quality management at Daimler.

“Records” means all non-identical copies of all documents, records, reports, or other information (including documents, records, or other information in electronic form).

“Regeneration Mode” means the period of operation in which the ATS is operated at temperatures consistent with a DPF Regeneration Event and with a minimum temperature and minimum duration specified in the Updated AECD Document for Emission Modification Category 9.

“Remedy Period” has the meaning set forth in Appendix A, Paragraph 18.j.

“Research & Development Department(s)” or “R&D” or “R&D department” mean the research and development departments of Mercedes-Benz Cars and Mercedes-Benz Vans.

“Risk Assessment” means the annual processes to systematically identify and assess the respective compliance risks of all Daimler entities.

“SC03” means the emission test cycle described in Appendix I, Paragraph (h) (Dynamometer Schedules) of 40 C.F.R. Part 86 and the procedures set forth in 40 C.F.R. §§ 1066.810 and 1066.835.

“Secondary Emission Plus Test Vehicles” means one or more backup, or secondary, Emission Plus Test Vehicles for each Emission Modification Category that meet the requirements of Appendix B, Paragraph 1.c.

“Secondary OBD Demonstration Vehicles” means one or more backup, or secondary, OBD Demonstration Vehicles for each OBD Cluster that meet the requirements of Appendix B, Paragraph 1.c.

“Secondary Vehicles” means Secondary Emission Plus Test Vehicles and/or Secondary OBD Demonstration Vehicles.

“Section” means a portion of this Consent Decree identified by a capitalized Roman numeral.

“Section 1968.5 OBD Noncompliance” means the OBD Noncompliances described in Paragraph 53.c.iv.

“Selective Catalytic Reduction System” or “SCR System” means all hardware, components, parts, sensors, subassemblies, software, AECDS, calibrations, and other elements of design that collectively constitute the system for controlling NO_x emissions through catalytic reduction using an ammonia-based DEF as the reducing agent, including without limitation all hardware, components, parts, sensors, subassemblies, software, AECDS, calibrations, and other elements of design relating to (1) the DEF storage tank, (2) the DEF injectors, (3) the dosing control unit, and (4) the SCR catalyst assembly.

“Sprinters” means the vehicles in Emission Modification Categories 1–3.

“Standard Road Cycle” or “SRC” means the test cycle described in 40 C.F.R. Part 86, Appendix V.

“Statement of Position” means a written statement of position by any Party regarding a matter in dispute to be resolved through formal dispute resolution procedures pursuant to Paragraphs 72–75 of this Consent Decree.

“Subject Vehicles” means any vehicles identified in Appendix B, Attachment I that Defendants sold or offered for sale in, or introduced or delivered for introduction into commerce in the United States or its Territories, or imported into the United States or its Territories, and that are or were purported to have been covered by the EPA test groups and/or CARB test groups listed in Appendix B, Attachment I.

“Submission” means any plan, report, application, or other item that is required to be submitted for approval pursuant to this Consent Decree.

“Supervisory Board” means the corporate governance board of Daimler AG, which monitors and advises the BoM.

“tCMS Multiplier” means a contact person within R&D for technical compliance-related issues.

“tCMS R&D” or “tCMS R&D department” mean the dedicated tCMS units established within R&D (both Mercedes-Benz Passenger Cars and Vans). Both of these units report directly to the respective heads of the R&D departments.

“tCMS Risk Assessment” means the annual Risk Assessment conducted for technical product compliance risks, designed to measure the technical product compliance and environmental risk exposure of R&D departments, and identify the specific risks existing within each of those departments. The tCMS Risk Assessment is conducted by IL/P.

“Technical Compliance Committee” or “TCC” means the committee consisting of mainly E2-level representatives from IL/P, R&D, Certification, tCMS R&D, Communications, and External Affairs, which participates in the cross-functional decision-making process and considers Clearing Cases.

“Technical Compliance Management System” or “tCMS” means Daimler’s technical compliance management system, consisting of values, principles, structures, and processes that have the primary objective of addressing all significant technical and environmental risks arising during the product life cycle, including risks related to emissions and certification.

“Test Group” means the basic classification unit within a durability group as determined under 40 C.F.R. § 86.1827-01, used for the purpose of demonstrating compliance with exhaust emission standards in accordance with 40 C.F.R. § 86.1841-01.

“Test Protocol” means Appendix B and all Attachments thereto.

“Test Vehicles” mean vehicles that meet the requirements of Appendix B, Paragraphs 1.a–1.c and Appendix B, Attachment A, and that are tested pursuant to Appendix B.

“THC” means total hydrocarbons.

“Transmission Control Unit” or “TCU” means the electronic hardware device, together with the software and calibrations installed on the device, that controls the operation of the transmission in the Subject Vehicles.

“Ultra Low Emission Vehicle” or “ULEV” means any vehicle certified by CARB as meeting CARB ultra-low-emission vehicle standards, either under 13 C.C.R. § 1961(a)(1) for 2004 through 2019 vehicles certified under the California LEV II exhaust emission standards, or under 13 C.C.R. § 1961.2(a)(1) for 2015 and subsequent model year vehicles certified under the California “LEV III” exhaust emission standards.

“Unified Drive Cycle” or “UDC” means the “Unified Cycle Driving Schedule” defined in Part II of the “California 2015 and Subsequent Model Criteria Pollutant

Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles,” incorporated by reference in 13 C.C.R. § 1961.2.

“United States” means the United States of America, acting on behalf of EPA.

“United States/California” means the United States and California jointly, or the United States or California, as applicable.

“United States/CARB” means the United States and CARB jointly, or the United States or CARB, as applicable.

“Unreported OBD Noncompliance” means the OBD Noncompliances described in Paragraph 53.c.iii.

“Updated AECD Document” means the document that meets the requirements of Appendix B, Paragraph 4.a.ii.

“U.S. Complaint” means the complaint filed by the United States in this action on September 14, 2020.

“Urban/Downtown Los Angeles Route” means the driving route shown and described in Appendix B, Attachment D.

“US06” means the emission test cycle described in Appendix I, Paragraph (g) (Dynamometer Schedules) of 40 C.F.R. Part 86 and the procedures set forth at 40 C.F.R. §§ 1066.810 and 1066.831.

“VIN” means vehicle identification number, as defined in 49 C.F.R. § 565.12(r).

“WAL” means worst acceptable limit as set forth in 13 C.C.R. § 1968.2(h)(6.4.1) (2016).

“Warrantable Failure” has the meaning set forth in Appendix A, Paragraph 18.j.

IV. CIVIL PENALTY

8. Within 30 Days after the Effective Date, Defendants shall pay the total sum of \$875,000,000 as a civil penalty, together with interest accruing from the Date of Lodging at the rate specified in 28 U.S.C. § 1961 as of the Date of Lodging. Defendants are jointly and severally liable for payment of the sum in the prior sentence.

9. Of the amount set forth in Paragraph 8, Defendants shall pay \$743,750,000, plus the interest due thereon, to the United States, by FedWire Electronic Funds Transfer to the U.S.

Department of Justice account, in accordance with instructions provided to Defendants by the Financial Litigation Unit (“FLU”) of the United States Attorney’s Office for the District of Columbia after the Effective Date. The payment instructions provided by the FLU will include a CDCS number, which Defendants shall use to identify all payments required to be made in accordance with this Consent Decree. The FLU will provide the payment instructions to:

Daimler AG
z. H. Kurt Schäfer
Werk 096, HPC Z300
70546 Stuttgart, Germany
Email: kurt.schaefer@daimler.com
Phone: +49 711 17-92203

Daimler AG
z. H. Frank Wetter
Werk 096, HPC Z304
70546 Stuttgart, Germany
Email: frank.wetter@daimler.com
Phone: +49 711 17-92945

on behalf of Defendants. Defendants may change the individual to receive payment instructions on its behalf by providing written notice of such change to the United States and EPA in accordance with Section XVI (Notices).

At the time of payment, Defendants shall send notice that payment has been made: (1) to EPA via email at cinwd_acctsreceivable@epa.gov or via regular mail at EPA Cincinnati Finance Office, 26 W. Martin Luther King Drive, Cincinnati, Ohio 45268; (2) to the United States via email or regular mail in accordance with Section XVI (Notices); (3) to EPA in accordance with Section XVI (Notices); and (4) to CBP via email in accordance with Section XVI (Notices). Such notice shall state that the payment is for the civil penalty owed pursuant to the Consent Decree in *United States v. Daimler AG et al.*, and it shall reference Civ. No. 1:20-cv-2564 the CDCS Number, and DJ # 90-5-2-1-11788.

10. Of the amount set forth in Paragraph 8, Defendants shall pay \$131,250,000, plus the interest due thereon, to CARB by check, accompanied by a Payment Transmittal Form (which CARB will provide to the addressee listed in Paragraph 9 after the Effective Date), with the check mailed to:

California Air Resources Board
Accounting Office
P.O. Box 1436
Sacramento, CA 95812-1436;

or by wire transfer, in which case Defendants shall use the following wire transfer information and send the Payment Transmittal Form to the above address prior to each wire transfer:

State of California Air Resources Board
c/o Bank of America, Inter Branch to 0148
Routing No. 0260-0959-3; Account No. 01482-80005
Notice of Transfer: Accounting; Fax: (916) 322-9612
Reference: CARB Case #C00032.

Defendants are responsible for any bank charges incurred for processing wire transfers, and for replacing any checks due to a check bouncing or being lost in the mail. Penalties paid to CARB under this Consent Decree shall be deposited into the Air Pollution Control Fund for the purpose of enhancing CARB's mobile source emissions control program through additional certification review, in-use evaluation, real-world testing, enforcement actions, and other CARB activities related to the control of air pollution.

11. Defendants shall not deduct any penalties paid under this Consent Decree pursuant to this Section IV (Civil Penalty) or Section X (Stipulated Penalties) in calculating their U.S. federal, state, or local income tax.

V. APPROVAL OF SUBMISSIONS; U.S./EPA/CARB DECISION-MAKING

12. For purposes of this Consent Decree, unless otherwise specified in this Consent Decree:

- a. with respect to any Submission, other obligation that requires approval or other decision by Plaintiffs, or force majeure claim of Defendants that concerns Section VI (Subject Vehicle Compliance) or that concerns Appendix B, EPA/CARB or the United States/CARB shall issue a joint or sole decision, as applicable, concerning the Submission, other obligation, or force majeure claim;
- b. with respect to any Submission, other obligation that requires approval or other decision by Plaintiffs, or force majeure claim of Defendants that concerns Section VIII (Mitigation), EPA or the United States shall issue a decision concerning the Submission, other obligation, or force majeure claim;
- c. with respect to any other Submission, obligation that requires approval or decision by Plaintiffs, or force majeure claim of Defendants under this Consent Decree, the position of EPA or the United States, after consultation with CARB, shall control.

13. Except as otherwise specified after review of any Submission, EPA/CARB or the United States/CARB shall in writing: (1) approve the Submission; (2) approve the Submission upon specified conditions; (3) approve part of the Submission and disapprove the remainder; or (4) disapprove the Submission. In the event of an approval upon specified conditions or a disapproval, in full or in part, of any portion of the Submission, if not already provided with the EPA/CARB or the United States/CARB written decision, upon the request of Defendants, EPA/CARB or the United States/CARB will provide in writing the reasons for such specified conditions or disapproval.

14. If the Submission is approved pursuant to (1) in Paragraph 13 above, Defendants shall take all actions required by the Submission, in accordance with the schedules and requirements of the Submission, as approved. If the Submission is conditionally approved or approved only in part pursuant to (2) or (3) in Paragraph 13 above, Defendants shall, upon written direction from EPA/CARB or the United States/CARB, take all actions required by the Submission that EPA/CARB or the United States/CARB determine(s) are technically severable from any disapproved portions, subject to Defendants' right to dispute only the conditions EPA/CARB or the United States/CARB specified or the disapproved portions, under Section XII (Dispute Resolution).

15. If the Submission is disapproved, in whole or in part pursuant to (3) or (4) in Paragraph 13 above, Defendants shall, within 45 Days or such other time as the Parties agree to in writing, correct all deficiencies and resubmit the Submission, or disapproved portion thereof, for approval, in accordance with Paragraph 13. If the resubmission is approved in whole or in part, Defendants shall proceed in accordance with Paragraph 14.

16. If a resubmitted Submission is disapproved, in whole or in part, EPA/CARB or the United States/CARB may again require Defendants to correct any deficiencies, in accordance with Paragraph 15; or EPA/CARB or the United States/CARB may itself/themselves correct any deficiencies, and Defendants shall implement the Submission as modified by EPA/CARB or the United States/CARB, subject to Defendants' right to invoke the dispute resolution procedures set forth in Section XII (Dispute Resolution) and the right of EPA/CARB or the United States/CARB to seek stipulated penalties.

17. Any stipulated penalties applicable to the original Submission, as provided in Section X (Stipulated Penalties), shall accrue during the 45-Day period or such other time as the

Parties agreed to in writing pursuant to Paragraph 15, but shall not be payable unless the resubmission of the original Submission is untimely or is disapproved in whole or in part; provided that, if EPA or the United States, in consultation with CARB, determines that the original Submission was so deficient as to constitute a material breach of Defendants' obligations under this Consent Decree, the stipulated penalties applicable to the original submission shall be due and payable notwithstanding any subsequent resubmission. In the event that EPA or the United States seeks stipulated penalties under this Paragraph, upon request of Defendants, EPA or the United States will provide in writing the reasons for such a finding of material deficiency, if not already provided with the EPA/CARB or United States/CARB written decision.

VI. SUBJECT VEHICLE COMPLIANCE

18. Emission Modification Program. The Parties shall implement the Emission Modification Program in accordance with the requirements set forth in Appendix A.

- a. Related Class Action Settlement. If the United States and CARB find and provide notice in writing to Defendants that provisions in a related Class Action Settlement are equivalent to the requirements of Appendix A, Paragraphs 1, 8–12, 15–16, 18, and 19 and Paragraphs 53.b.i–53.b.iii, 53.b.v (except with respect to Dealer Emissions Modification Disclosures), 53.b.viii, and 53.b.ix.A of this Consent Decree, Defendants shall be relieved of those obligations under this Consent Decree without further amendment to this Decree or action by the Court. All other terms of this Consent Decree shall remain in force and effect.
- b. Paragraph 18.a shall apply only if a United States district court grants a

motion for preliminary approval of the Class Action Settlement.

Defendants shall abide by the terms of this Consent Decree if (1) a United States district court denies with prejudice a motion for final approval of the Class Action Settlement; or (2) the equivalent provisions in the Class Action Settlement are not included in the court's final approval order or are delayed, reversed, or vacated by an appellate court for any reason, even if the United States and CARB provided notice to Defendants pursuant to Paragraph 18.a before an event described in (1) or (2) of this sentence occurs.

- c. If the requirements found in Paragraphs 18.a and 18.b are satisfied, and notice provided accordingly, Defendants are relieved of any obligations found in Paragraphs 53.b.i–53.b.iii, 53.b.v (except with respect to Dealer Emissions Modification Disclosures), 53.b.viii, and 53.b.ix.A of this Consent Decree specified in that notice without further amendment to this Decree or action by the Court.

19. Subject Vehicle In-Use Testing.

- a. OBD In-Use Monitoring Performance Verification and Reporting. Using a contractor or Dealer, Defendants shall collect and report in-use monitoring performance data as required by 13 C.C.R. § 1968.2(j)(3) (2016) (*i.e.*, verification and reporting of in-use monitoring performance) from 15 vehicles from each of Emission Modification Categories 1, 2, 3, 4, 5, and 9, and 5 vehicles from each of Emission Modification Categories 6, 7, 8, 10, 11, and 12 that has received the Approved Emission

Modification, within 360 Days after the first Eligible Vehicle from each Emission Modification Category is modified in accordance with Appendix A. Vehicles shall be selected, for the purposes of this Paragraph only, in accordance with 13 C.C.R. § 1968.2(j)(3) (2016) and 13 C.C.R. § 1968.5(b)(3)(D)(ii) (2016).

- b. In-Use Emission Standard Testing. Defendants shall undertake and complete in-use testing pursuant to this Paragraph 19.b. Defendants shall test according to the following schedule: (1) For Emission Modification Category 1 (also known as In-Use Group 1), begin testing no later than one year after the Effective Date, or one year after the date of approval of the Category 1 Emission Modification in accordance with Appendix B, Paragraph 5, whichever is later, and test each year thereafter; (2) for Emission Modification Category 9, begin testing no later than one year after the Effective Date, or one year after the date of approval of the Category 9 Emission Modification in accordance with Appendix B, Paragraph 5, whichever is later, and for each year thereafter, test from one of Defendants' choice of one of Emission Modification Categories 9, 10, 11, and 12 (collectively, also known as In-Use Group 2); (3) for Emission Modification Category 3 (also known as In-Use Group 3), begin testing no later than one year after the Effective Date, or one year after approval of the Category 3 Emission Modification in accordance with Appendix B, Paragraph 5, whichever is later, and for each year thereafter; (4) for Defendants' choice of one of Emission Modification Categories 4 and 5

(collectively, also known as In-Use Group 4), begin testing no later than one year after the Effective Date, or one year after approval of the Category 4 Emission Modification in accordance with Appendix B, Paragraph 5, whichever is later, and for each year thereafter; and (5) for Defendants' choice of one of Emission Modification Categories 7 and 8 (collectively, also known as In-Use Group 5), begin testing no later than one year after the Effective Date, or one year after approval of the Category 7 Emission Modification in accordance with Appendix B, Paragraph 5, whichever is later, and for each year thereafter. Defendants shall undertake and complete in-use emission standard testing in accordance with the requirements of this Paragraph 19.b. Within 9 to 12 months from the Effective Date, and each year thereafter for five years from the Effective Date, Defendants shall repeat the in-use testing required under this Paragraph, except for Subject Vehicles that are the subject of a determination of non-compliance issued pursuant to Paragraph 19.b.v.

- i. In-Use Verification Testing and Vehicle Selection. Defendants shall select no less than two Subject Vehicles for each Emission Modification Category that have been updated with the Approved Emission Modification for in-use verification testing that meet the requirements of Appendix B, Paragraph 1.b. Defendants may not exclude Subject Vehicles from being selected for in-use verification testing based solely upon the lack of maintenance

records or a history of multiple owners or repairs. Each Subject Vehicle shall have between 100,000 and 110,000 miles, and each Subject Vehicle shall have been driven no less than 1,500 miles since receiving the Approved Emission Modification. If Defendants are unable to find such a Subject Vehicle, Defendants may select a Subject Vehicle with mileage no less than 50,000 miles and no greater than 119,000 miles and driven no less than 1,500 miles since receiving the Approved Emission Modification. Defendants shall use best reasonable efforts to select a high mileage vehicle using the criteria above. In selecting vehicles for In-Use Groups 2, 4, and 5, which are comprised of different Emission Modification Categories, Defendants shall select and test a vehicle from a different Emission Modification Category than that selected for in-use testing in the prior year, provided such a vehicle can be acquired within the aforementioned mileage range. In addition, in the case of In-Use Group 4, Defendants shall select and test a different Model within the chosen Emission Modification Category than the Model selected for in-use testing in the prior year, provided such a vehicle can be acquired within the aforementioned mileage range. If Defendants cannot procure a high mileage vehicle, Defendants shall select and test a vehicle from the same Emission Modification Category as that selected for in-use testing in the prior year, and Defendants shall describe all

efforts made to procure such a vehicle and explain why it could not be reasonably procured under Paragraph 42.b (In-Use Testing). Vehicles that meet the requirements of this Paragraph shall be known as the “IUVT Vehicles.”

A. Evaluation of In-Use Verification Testing. On each of the IUVT Vehicles selected for in-use verification testing in accordance with Paragraph 19.b.i, above, Defendants shall conduct emissions tests pursuant to Paragraph 19.b.iii. If, after applying any IRAFs, but not any Deterioration Factors, that applied at the time of certification, either of the IUVT Vehicles exceeds the Emission Standard specified in Appendix B, Attachment I, and the average emissions of IUVT Vehicles tested is equal to or greater than 115 percent of the Emission Standard as a result of the testing specified in Paragraph 19.b.iii.A, Defendants shall undertake in-use confirmatory testing in accordance with Paragraph 19.b.ii. For purposes of calculating SFTP composite emission levels, Defendants shall include the IUVP FTP emissions, the IUVP US06 emissions, and the values from the SC03 test reported in the Emission Modification Proposal Report, or in the case of In-Use Group 3, the values from the MY20 certification application, if applicable. If more than one set of SC03

data exists, Defendants shall choose the SC03 result to use in the calculation from among those data sets using good engineering judgment. The calculations shall be made using the equations prescribed in 40 C.F.R. § 86.164.

- ii. In-Use Confirmatory Testing and Vehicle Selection. Within 20 Days of submitting in-use verification test results that meet the criteria for in-use confirmatory testing set forth in Paragraph 19.b.i.A, Defendants shall submit to EPA/CARB for review and approval an in-use confirmatory test plan (the “IUCP”) to test other Subject Vehicles within the same Emission Modification Category as the IUVT Vehicles that triggered the IUCP. Defendants’ IUCP Vehicles shall comply with the requirements of Appendix B, Paragraph 1.a and Paragraph 1.b, 40 C.F.R. § 86.1846-01(i), and must meet the requirements of Paragraph 19.b.i. The vehicles specified in IUCP shall be known as the “IUCP Vehicles.” Defendants shall commence testing under the IUCP no later than 90 Days from the Day EPA/CARB approve the IUCP, and shall complete testing under the IUCP within 210 Days from the Day EPA/CARB approve the IUCP. The approved IUCP shall only require Defendants to conduct emissions tests in accordance with Paragraph 19.b.iii.
 - A. Evaluation of In-Use Confirmatory Testing. If, after applying any IRAFs, but not any Deterioration Factors, that

applied at the time of certification, any IUCP Vehicle exceeds the Emission Standard specified in Appendix B, Attachment I for the tests conducted pursuant to Paragraph 19.b.iii.A, Defendants shall conduct an evaluation to determine the reason(s) for the failure. Defendants shall submit a report of their findings to EPA/CARB no later than 90 Days from conclusion of the IUCP. EPA/CARB may agree, in writing, to extend this deadline.

iii. Emissions Tests, Data Collection.

- A. For each IUVT Vehicle and any IUCP Vehicle, Defendants shall conduct FTP75 and HWFET emissions tests in accordance with Appendix B, Paragraph 2.b.i. In addition, for each IUVT Vehicle and any IUCP Vehicle in In-Use Groups 2, 4, and 5, Defendants shall conduct US06 emissions tests in accordance with Appendix B, Paragraph 2.b.i. For each IUVT Vehicle and any IUCP Vehicle in In-Use Group 3, Defendants shall conduct a modified US06 emissions test in accordance with 13 C.C.R. § 1961.2. All testing conducted pursuant to this Paragraph shall conform to the requirements of 40 C.F.R. Part 86, as modified by Appendix B, and conformity with 40 C.F.R. Part 1066 shall not be required.

- B. Defendants shall also perform special cycle and PEMS emissions tests under Appendix B, Paragraphs 2.b.i and 2.b.ii on each IUVT for the first, third, and fifth year of testing required under Paragraph 19.b, and on any IUCP vehicle, provided that the results of special cycle and/or PEMS testing conducted under this Paragraph cannot be the basis for determining a failure to meet the Emission Standard for in-use verification testing pursuant to Paragraph 19.b.i.A, or for determining a failure of in-use confirmatory testing pursuant to Paragraph 19.b.ii.A. Notwithstanding the foregoing, special cycle and PEMS emissions tests pursuant to this Paragraph shall not be required for In-Use Group 1. All testing conducted pursuant to this Paragraph shall conform to the requirements of 40 C.F.R. Part 86, as modified by Appendix B, and conformity with 40 C.F.R. Part 1066 shall not be required.
- C. Prior to EPA or CARB taking any action, including the assessment of stipulated penalties, based on the results of special cycle and/or PEMS emissions tests conducted on in-use vehicles, whether such testing was conducted by Defendants or by EPA/CARB, EPA/CARB must notify Defendants in writing of such planned action. If the in-use

testing was conducted by EPA and/or CARB, the testing agency shall concurrently provide Defendants with all available data, including but not limited to the ECU data and modal emissions data, for all testing conducted on vehicles in that In-Use Group. Thereafter, the parties must have a meet-and-confer period of no less than 60 Days to discuss the special cycle and/or PEMS emissions test results before any stipulated penalty can be assessed or any other action can be taken.

- D. For all tests conducted under this Paragraph 19.b.iii, Defendants shall collect data from such tests in accordance with Appendix B, Paragraphs 4.a.v, 4.a.vi, 4.a.vii, 4.a.xvi, and 4.a.xvii, except that the requirement to collect ECU data in Appendix B, Paragraphs 4.a.vi and 4.a.vii shall not apply and instead, Defendants shall collect ECU data in accordance with the procedures outlined in Appendix C. Additionally, for all tests conducted under Paragraph 19.b.iii, in accordance with 13 C.C.R. § 1968.2 (2016), Defendants shall collect all downloads of all standardized OBD data from the tested vehicles, both before and after conducting each test required by Paragraphs 19.b.i and 19.b.ii, except that for PEMS testing, if more than one PEMS route is conducted in a single day, the downloads

shall be conducted before the start of the first PEMS route and after the end of the final PEMS route on that day when the vehicle has returned to Defendants' testing facility.

- iv. FUL Limitation. Defendants are not required to test any vehicle with mileage beyond its FUL.
- v. EPA/CARB Options Following IUCP Testing Failure. Upon receipt and consideration of a report pursuant to Paragraph 19.b.ii.A, EPA/CARB shall, in writing: (1) determine that no further action is required, (2) issue a Determination of In-Use Non-Compliance due to failure of the Approved Emission Modification and may assess stipulated penalties pursuant to Paragraph 53.d.iii (Failure to Comply with Emission Standards), and/or (3) issue a Determination of In-Use Non-Compliance and follow their regulatory procedures for determining whether to implement a recall under 40 C.F.R. Part 85, Subpart S, and 13 C.C.R. §§ 2113 and 2123 or take other appropriate actions under their respective regulations with respect to all Subject Vehicles identified in the Determination of In-Use Non-Compliance. Any administrative action under (3) in the preceding sentence in this Paragraph 19.b.v shall not be subject to review under Section XII (Dispute Resolution) of this Consent Decree. If Defendants miss the applicable deadline to submit a report pursuant to Paragraph 19.b.ii.A, EPA/CARB may issue a Determination of In-Use Non-

Compliance without waiting to receive such report from Defendants. Additionally, notwithstanding any other provision of this Consent Decree including Paragraph 86 and Paragraph 87 (concerning effect of settlement), the United States and California reserve all equitable rights to address any non-compliance identified in the Determination of In-Use Non-Compliance under applicable laws and regulations by instituting proceedings in this action or in a new action and/or by pursuing administrative remedies.

- vi. Notification of Testing. Defendants shall notify EPA/CARB at least 15 Days prior to commencing testing in accordance with Paragraph 19.b.i.A (In-Use Verification Testing), Paragraph 19.b.ii (In-Use Confirmatory Testing), and, as applicable, Paragraph 19.b.ii.A (Evaluation of In-Use Confirmatory Testing) so that EPA/CARB may observe the testing.

- c. Reporting. In-use testing under Paragraph 19.a and 19.b.i shall be reported in the next semi-annual report, in accordance with Paragraph 42.b (In-Use Testing). In-use testing under Paragraphs 19.b.ii and 19.b.ii.A shall be reported in accordance with those subparagraphs. If any IUVT Vehicle or IUCP Vehicle in an Emission Modification Category fails the Emission Standard specified in Appendix B, Attachment I, Defendants shall notify the persons designated in Section XVI (Notices) for EPA/CARB within 72 hours of such event.

- d. Publication of Data. For any IUVT Vehicle, within 30 Days of submitting the applicable semi-annual report, Defendants shall post an emissions test report containing the bag results, and all second-by-second modal (continuous) emissions data for NO_x, total hydrocarbons, carbon monoxide, carbon dioxide, and non-methane hydrocarbons for each emissions test required pursuant to Paragraph 19.b.iii.A, and each test required by Paragraph 19.b.iii.B, on the public website required by Appendix A, Paragraph 16. For any IUCP Vehicle, within 30 Days of receipt of the EPA/CARB written response pursuant to Paragraph 19.b.v, Defendants shall post an emissions test report containing the bag results, and all second-by-second modal (continuous) emissions data for NO_x, total hydrocarbons, carbon monoxide, carbon dioxide, and non-methane hydrocarbons for each emissions test required pursuant to Paragraph 19.b.iii.A, and each test required by Paragraph 19.b.iii.B, on the public website required by Appendix A, Paragraph 16. Defendants shall provide the modal (continuous) emissions data specified in this Paragraph in a format that can be imported into a spreadsheet. Defendants shall not be required to post, pursuant to this Paragraph, any data that has been invalidated pursuant to Appendix B, Paragraph 2.a.iv. The Parties agree and acknowledge that neither United States nor California law sets forth a standard by which PEMS and off-cycle dynamometer testing can be used to determine compliance for purposes of certification under Title II of the Clean Air Act.

VII. CORPORATE COMPLIANCE

20. Defendants shall undertake the Corporate Compliance provisions of this Consent Decree in conjunction with their existing corporate and compliance management activities with the goal to:

- a. Prevent environmental compliance problems related to United States or California environmental laws and regulations from arising in the first instance;
- b. Detect any environmental compliance problems related to United States or California environmental laws and regulations that do arise; and
- c. Respond to any environmental compliance problems related to United States or California environmental laws and regulations that arise, including modifying broader policies, processes, controls or any other activities that allowed the problem to arise, and self-disclose, as appropriate, to EPA and CARB where disclosure should have occurred in the first instance.

To meet the goals of this Section VII, Defendants have designed the measures described in Paragraphs 28–30 to target compliance with United States and California laws and regulations governing light- and medium-duty vehicle emission and certification.

21. Defendants have developed and are continuing to implement and enhance existing various corporate governance policies and practices in the areas of integrity, business ethics, and environmental compliance. Defendants describe these policies and practices in their Operating Plan for Technical and Environmental Product Compliance (“Compliance Operating Plan”), attached hereto as Appendix D. These efforts include: (1) compliance-related corporate

organizations; (2) a compliance management system (“CMS”) to detect and address Company-wide compliance risks; (3) a technical compliance management system (“tCMS”), which focuses specifically in part on vehicle environmental compliance; (4) technical compliance and certification control measures to detect and address Company-wide vehicle environmental compliance risks; and (5) external communication of Daimler’s compliance efforts. Defendants will conduct both (1) internal audits and (2) a third-party review to evaluate these efforts.

22. Defendants shall implement both the policies and practices contained in their Compliance Operating Plan and the requirements contained in this Section VII (Corporate Compliance).

23. Segregation of Duties. Defendants shall maintain the separation of individuals and organizational units within the company that deal with: vehicle certification; vehicle research and development; and internal corporate audits. Each of these organizational units shall primarily report to a different Board of Management member.

24. Integrity Code. Defendants have modified their Integrity Code’s environmental protection and technical compliance provisions to emphasize the reduction of air emissions and the improvement of air quality by, in part, emphasizing compliance with environmental laws and regulations. By September 30, 2020, Defendants shall inform and train their employees regarding the modified Code.

25. Employee Discipline and Compensation. Defendants shall continue to factor environmental compliance into the integrity factor for the variable compensation structure of their relevant middle- and senior-level managers, and shall periodically assess any additional adjustments to how this compliance factors into compensation. Defendants shall continue to

subject employees who violate any environmental compliance requirement to appropriate internal disciplinary measures.

26. Whistleblower System.

- a. Defendants shall continue to implement their existing Business Practices Office (“BPO”) (their whistleblower office) to report, investigate, and mitigate any environmental compliance issues. Defendants’ BPO shall continue to be centralized and available to all of Defendants’ employees, and shall maintain the ability to report anonymously in Germany and the United States, and otherwise as permitted by local law, possible environmental compliance issues. Employees in Germany shall continue to have the option to make reports to the Neutral Intermediary, an independent external attorney, who shall be available to receive and forward anonymous BPO reports.
- b. Defendants have trained the BPO Neutral Intermediary on vehicle emissions and certification compliance issues and have provided the Intermediary with an independent tCMS expert contact point to clarify vehicle emissions and certification compliance questions. Defendants’ BPO Neutral Intermediary has participated in an expert-level dialogue with IL/P and an external technical expert regarding vehicle emissions and certification compliance risks.
- c. By December 31, 2020, Defendants shall clarify in their Treatment of Violations Policy used by the BPO, and in related training, that environmental noncompliance of a product within the United States

always constitutes “serious risk.”

- d. Defendants have formalized and documented the requirement that BPO employees assigned to review any reported potential environmental compliance violation discuss the reported violation with the head of the BPO in person.
- e. Defendants have launched a communication campaign within research and development (“R&D”) to promote the BPO. This campaign shall last until at least December 31, 2021.
- f. By December 31, 2020, Defendants shall test and measure the actual reach of the communication campaign by way of a dedicated anonymous survey among all addressed audiences. The survey’s results shall be used for further development of additional communication and improvement of the BPO.
- g. Defendants have fully implemented an embedded IT system control that ensures that a BPO case cannot be closed without review by at least two BPO employees.

27. Risk Assessment. Defendants shall continue to perform their annual compliance Risk Assessment. Defendants shall complete their compliance Risk Assessment for 2019, and shall assign any mitigating measures by December 31, 2019. Defendants shall complete compliance Risk Assessments by December 31 of every year for the duration of this Consent Decree. Defendants shall implement any mitigation measures assigned to address compliance risks and shall track completion of new mitigation measures for material risks, including risks

related to compliance with U.S. and California laws and regulations governing vehicle emissions and certification.

28. Business Partner and Supplier Integrity Management.

- a. As described in this Paragraph 28, Defendants shall continue to evaluate their business partners' environmental compliance and the effects that those partners' compliance could have on Defendants' own environmental compliance. For purposes of this Section VII (Corporate Compliance), unless otherwise specified herein, "suppliers" shall refer to suppliers which Defendants have a contractual relationship with and which directly provide to Defendants Emission-Related software, Emission-Related software calibrations, or Emission-Related hardware parts for use in vehicles intended for certification in the United States or California.
- b. Defendants have enhanced their screening process to identify suppliers that have potentially violated environmental regulatory requirements.
- c. By December 31, 2020, Defendants shall enhance the general terms and conditions in their standard supplier contracts to include an explicit requirement to comply with technical regulations and laws, which include laws and regulations governing vehicle emissions and certification, and will undertake reasonable best efforts to include the requirement to comply with technical regulations into contracts entered into with suppliers. Defendants shall undertake reasonable best efforts to include a requirement in supplier contracts to document or notify Defendants in writing when the supplier determines that the supply of an Emission-

Related part or performance of an Emission-Related service will result in Defendants violating U.S. or California vehicle emissions or certification regulations or laws, except where deficiencies under 13 C.C.R. §§ 1968.2 or 1968.5 may be permitted with appropriate disclosure to EPA or CARB.

- d. Defendants shall undertake reasonable best efforts to have its suppliers include in their contracts entered into with other suppliers that provide Emission-Related software, Emission-Related software calibrations, and/or or Emission-Related hardware parts for the ultimate use by Defendants in vehicles intended for certification in the United States or California terms that require these suppliers to document or notify the Defendants' direct supplier in writing when it determines that the supply of an Emission-Related part or performance of an Emission-Related service will result in Defendants violating U.S. or California vehicle emissions or certification regulations or laws, except where deficiencies under 13 C.C.R. §§ 1968.2 or 1968.5 may be permitted with appropriate disclosure to EPA or CARB.
- e. From June 30, 2020, onward, Defendants shall establish and maintain a list of suppliers that provide an Emission-Related part or Emission-Related service that, to Defendants' knowledge, result in Defendants violating U.S. or California vehicle emissions or certification regulations or laws, except where deficiencies are permitted with appropriate disclosure to EPA or CARB. Additionally, Defendants shall include on such a list suppliers that have been found by a governmental

environmental agency to have violated U.S. or California vehicle emissions or certification regulations or laws in an administrative agreement, consent decree, settlement agreement, or other formal judgment or adjudication. Such list shall identify both the supplier of the Emission-Related parts or service and the individual Emission-Related part or service which resulted in the violation.

- f. By December 31, 2019, Defendants shall update their Compliance Awareness Module (“CAM”) for sales business partners that sell Defendants’ vehicles or vehicle parts (“Sales Business Partners”) to include information for those Sales Business Partners on environmental compliance topics and contact information for Defendants’ BPO.
 - i. By December 31, 2019 Defendants shall begin rollout of the updated CAM to Sales Business Partners.
 - ii. By December 31, 2020 Defendants shall implement an automatic CAM invitation process for every new Sales Business Partner.
 - iii. Defendants have implemented an automatic CAM invitation process for every new supplier.
- g. By December 31, 2019, Defendants shall identify relevant suppliers that are supplying Emission-Related parts or services to “High-risk” departments (according to the tCMS Risk Assessment described in Paragraph 29.e) and shall provide to those suppliers an additional tCMS awareness presentation.
- h. Defendants have identified and conducted an in-person workshop with

suppliers that provide products or services directly relating to compliance with United States or California vehicle emissions or certification laws or regulations, to detail Defendants' expectations regarding environmental compliance.

- i. By June 30, 2020 Defendants shall establish environmental compliance-related communications and escalation processes with suppliers that provide products or services directly relating to compliance with United States or California vehicle emissions or certification laws or regulations, and, by June 30, 2020, Defendants shall develop and provide a platform and guidance for these suppliers to evaluate their own environmental compliance systems and Emission-Related development processes.
- j. By December 31, 2019, Defendants shall develop and begin providing specific web-based training on United States and California vehicle emissions and certification laws and regulations to suppliers that provide products or services directly relating to compliance with United States or California vehicle emissions or certification laws and regulations.

29. Compliance Management System and Technical Compliance Management System.

- a. Defendants shall continue to implement and evaluate both their corporate-wide CMS and their tCMS to prevent, detect, and respond to information that may lead to issues regarding environmental compliance.
- b. By December 31, 2019, and annually thereafter, Defendants shall conduct a CMS effectiveness evaluation.

- c. By December 31, 2019 and annually thereafter, Defendants shall conduct a tCMS effectiveness evaluation, that includes, among other things, interviews of relevant employees, self-assessments, and evaluation of feedback received through consultation channels such as the tCMS multiplier network or via the BPO, which provides a channel for employees to provide anonymous feedback that may be relevant to the Effectiveness Evaluation, to determine if the tCMS program elements are designed and implemented effectively and, if they are not, to assign measures to improve the tCMS program. All tCMS effectiveness evaluations will be presented to the Compliance Board, the Group Risk Management Committee, the Board of Management (“BoM”), and the Audit Committee of the Supervisory Board.
- d. tCMS Training.
 - i. Defendants have required face-to-face tCMS training of all relevant existing employees within R&D departments. Defendants shall require face-to-face tCMS training with all relevant new employees within R&D departments. Defendants have implemented web-based tCMS training and shall require ongoing web-based tCMS training with relevant existing and new R&D employees.
 - ii. By December 31, 2019, and annually thereafter, Defendants shall provide specific mandatory training on United States and California emissions and certification regulations and laws,

including OBD, AECDs, and defeat devices to relevant R&D department employees. Defendants shall, on a risk basis, periodically evaluate which employees should receive this training.

iii. Defendants have distributed their AECD Documentation Guidelines to all Certification and R&D department employees that deal with these issues, and shall continue to annually distribute their AECD Documentation Guidelines to all Certification and R&D department employees that deal with these issues.

e. tCMS Risk Assessment and Control Objectives.

i. By December 31, 2019, and annually thereafter, Defendants shall conduct an annual tCMS Risk Assessment that includes, among other things, evaluation of feedback regarding environmental compliance risks and suggested improvements provided via established consultation channels such as the tCMS multiplier network, and/or via the BPO, to measure the risk exposure of R&D departments. By December 31, 2020, Daimler shall include in the tCMS Risk Assessment survey a statement inviting anonymous feedback through the BPO. As part of these tCMS Risk Assessments, Defendants shall assign mitigating measures. As part of the tCMS Risk Assessment process, Defendants shall conduct sample checks of mitigation measures to evaluate the effectiveness of mitigation measures and annually update the

tCMS Risk Assessment to improve the identification of risks and the completion of mitigation measures.

- ii. In conjunction with each annual tCMS Risk Assessment beginning with the 2020 calendar year, Defendants shall determine the effectiveness of prior year Assessments, and refine the following year Assessment based on this determination.
- iii. By December 31, 2019, and annually thereafter, Defendants shall identify tCMS control objectives to monitor processes used for environmental and technical compliance including detecting and disclosing AECDs and detecting and preventing defeat devices, and shall, as part of the Effectiveness Evaluation process, evaluate whether the objectives are being met.

30. Technical Compliance and Certification Control Measures.

- a. Regulatory Monitoring Meeting. By December 31, 2019, and quarterly thereafter, Defendants shall hold cross-functional Regulatory Monitoring Meetings in which Defendants shall aggregate developments on emerging United States or California emissions laws and regulations from various inputs and provide one consolidated source of information that is distributed on a management level within R&D departments.
- b. Enhanced Regulatory Database. By December 31, 2021, Defendants shall finalize an Enhanced Regulatory Database accessible to all R&D department employees which will contain, in addition to other material, environmental compliance requirements arising from United States or

California laws, regulations, or guidance.

- c. Systematic Derivation of Technical Specifications. By December 31, 2020, Defendants shall develop and establish an enhanced process for systematically deriving technical specifications from United States or California regulatory requirements for technical or environmental compliance. The systematic derivation of technical specifications is intended to take the regulatory requirements for vehicle emissions and certification compliance and turn them into parameters or limits for engine or aftertreatment performance, which are then applied to the design of software. Following December 31, 2020, derivation of these technical specifications will be a mandatory step in the development of powertrains for use in vehicles to be certified as light- and medium duty vehicles.
- d. Software Compliance Guide. Defendants shall maintain and update their Software Compliance Guide and provide electronic access to the Guide to all R&D department employees. Defendants' Software Compliance Guide shall require, at a minimum, that all software not detect or respond in any way to United States or California test cycles or test cycle parameters and that all software be designed independent from any such regulatory test cycles and test cycle parameters.
- e. Disclosure-Relevant Control Parameters. By June 30, 2020, Defendants shall implement a process to identify, track, and list all disclosure-relevant control parameters to ensure that any changes that materially affect such control parameters are reflected in AECD disclosure documents as

required by United States or California laws, regulations, or guidance.

After June 30, 2020 Defendants shall continually revise and update this list of disclosure-relevant control parameters.

- f. Compliance Check by Functional Group Leaders. Defendants are establishing and implementing the role of Functional Group Leaders and a tool-based requirement that Functional Group Leaders approve any new software functions developed or requested by Daimler to be used in ECUs, TCUs, CPCs, and DCUs in light-or medium-duty vehicles intended for certification in the United States or California.
 - i. Defendants have established the role of Functional Group Leaders and have established a tool-based requirement that Functional Group Leaders approve any new software functions developed or requested by Daimler to be used in ECUs, TCUs, or CPCs in Mercedes-Benz Passenger Car vehicles to be certified as light- or medium duty that have been assigned to respective Functional Groups.
 - ii. By July 1, 2020, Defendants shall implement the role of Functional Group Leader and implement this tool-based requirement that Functional Group Leaders approve any new software functions developed or requested by Daimler to be used in ECUs, TCUs, and CPCs in Mercedes-Benz Passenger Car vehicles that have been assigned to respective functional groups.

- iii. By July 1, 2020, Defendants shall establish the role of Functional Group Leader and establish a tool-based requirement that Functional Group Leaders approve any new software functions developed or requested by Daimler to be used in ECUs, TCUs, and CPCs in Mercedes-Benz Van and AMG vehicles, that have been assigned to respective functional groups.
- iv. By December 1, 2021, Defendants shall implement this tool-based requirement that Functional Group Leaders approve any new software functions developed or requested by Daimler to be used in ECUs, TCUs, CPCs, and DCUs in light-or medium-duty vehicles, that have been assigned to respective functional groups.

g. Software Screening.

- i. Screening of Functions for Review. By December 31, 2020, Defendants shall develop and establish a Tool-Supported Screening Process designed to identify functions that may qualify as AECDs during software development so that the functions will be further evaluated.
- ii. By March 31, 2021, and continuing thereafter, Defendants shall use a Tool-Supported Screening Process to screen all new U.S. powertrain projects to identify software functions that may qualify as AECDs.
- iii. Tool-Supported Calibration Check. By December 31, 2019, Defendants shall use their Tool-Supported Calibration Check to

screen calibrations in ECU and TCU software of all gasoline and diesel vehicles intended for certification as light- and medium-duty vehicle models in the United States and shall use their Tool-Supported Calibration Check to screen ECU- and TCU- relevant software changes (running changes or changes implemented via field measures) developed or requested by Daimler to light- and medium-duty diesel vehicle models issued Certificates of Conformity or Executive Orders.

- iv. Beginning with MY2021, Defendants shall use their Tool-Supported Calibration Check to screen calibrations in DCU and CPC software of all vehicles intended for certification as light- and medium-duty diesel vehicle models in the United States and use their Tool-Supported Calibration Check to screen calibrations in CPC software of two light- or medium-duty gasoline vehicle models intended for certification in the United States.
- v. Beginning with MY2022 Defendants shall use their Tool-Supported Calibration Check to screen calibrations in CPC software of all vehicles intended for certification as light- and medium-duty gasoline vehicle models in the United States.
- vi. Beginning with MY2022, Defendants shall use their Tool-Supported Calibration Check to screen DCU- and CPC-relevant software changes (running changes or changes implemented via

field measures) to vehicles issued Certificates of Conformity or Executive Orders as light-duty and medium-duty diesel vehicles.

h. Controls on the Certification Process.

i. Off-Cycle Testing Prior to Certification.

A. Diesel. Defendants shall continue to conduct PEMS and off-cycle dynamometer testing as specified in Appendix A to the MY2017 OM642 Sprinter AECD documentation for any new vehicles issued Certificates of Conformity or Executive Orders through and including MY2023 as light- or medium-duty diesel models.

B. Gasoline. Defendants shall conduct PEMS testing to demonstrate off-cycle tailpipe emissions and screen for undisclosed AECDs or defeat devices on three vehicles certified as light- or medium-duty gasoline Test Groups per Model Year from MY2021 through and including MY2024. Defendants shall select the Test Groups based on sales volume, selecting the highest volume Test Groups per Model Year using the projected 50 states' sales volumes prepared for NMOG + NO_x fleet averages under Tier 3, except that Defendants shall not repeat testing of any Test Group during the duration of the Consent Decree. Defendants shall conduct the PEMS testing over the Combined Freeway and Uphill/Downhill Route and the

Urban/Downtown Los Angeles Route, specified in Appendix B, Attachment D, as follows: (1) multiple PEMS tests on the test vehicle may be conducted in the same Day; (2) the first PEMS test on each Day shall be started after a soak of at least 6 hours. The test vehicle may be parked outdoors in Los Angeles for the soak period, or indoors at an ambient temperature of between 68°F and 86°F; (3) if it is not possible to park the vehicle at the start of the PEMS route for the soak period, the vehicle may be cold-started at another location, provided that the emissions results and PEMS testing data are collected from engine-on and a map of the route is provided along with the other data reported under this Paragraph 30.h.i.B. Defendants have completed the required PEMS testing and submitted corresponding reports for MY2021. For each PEMS test conducted for MY2022 through and including MY2024, Defendants shall collect and report the following to EPA and CARB: (1) all raw data generated for speed, load, second-by-second emissions data, and the signals and parameters listed in Appendix E in a .CSV file format and in the native format of the PEMS unit, the AVL iFile; (2) average emissions results for NO_x and CO₂, ambient temperature and other information related to environmental conditions during the

test; (3) average emissions results for THC and CO, ambient temperature and other information related to environmental conditions during the test; and (4) a Flat File of each test that includes vehicle identification information, the VIN, a test identification number, and average emissions results per route segment (parsing). Post-processing of PEMS data shall be carried out as follows: (1) drift correction shall be performed in accordance with 40 C.F.R. § 1065.672; (2) wet/dry correction shall be performed in accordance with 40 C.F.R. § 1065.655; and (3) humidity correction shall be performed in accordance with 40 C.F.R. § 1065.670. Defendants shall also collect data for the signals and parameters listed at Appendix E. Defendants shall submit the PEMS testing emissions data to the certification departments at EPA and CARB, in the format specified by those certification departments, no later than, for EPA, three months prior to the submission of the Request for Certificate for the Test Group application for certification, and, for CARB, no later than 30 days after submission of the request for an Executive Order.

- C. Public posting of data. Within 30 Days of introduction to commerce of the first vehicle in each Test Group covered by Paragraphs 30.h.i.A and 30.h.i.B (*i.e.*, after approval of

certification of the Test Group), or within 30 Days of the Effective Date, whichever comes later, Defendants shall post the PEMS data described in Paragraphs 30.h.i.A and 30.h.i.B (redacted of any CBI or PII, the disclosure of which is restricted by applicable law, provided that no emissions test methods, data, or results may be claimed as CBI) on the public website required by Paragraph 16 of Appendix A, except that Defendants shall not be required to post the raw data generated for speed, load, second-by-second emissions data, and the signals and parameters listed in Appendix E.

D. Testing entity. A team located in Los Angeles, California, and independent from Defendants' product development, shall conduct the testing required by this Paragraph.

E. The Parties agree and acknowledge that neither United States nor California law sets forth a standard by which PEMS and off-cycle dynamometer testing can be used to determine compliance for purposes of certification under Title II of the Clean Air Act.

ii. Emission-Related Parts List. As required by Appendix D, Section V, Paragraph C.2, Defendants shall maintain a list of Emission-Related parts in vehicles certified as light- and medium-duty vehicles, and update the list annually by December 31 to ensure

that the parts list complies with applicable regulatory guidelines while incorporating technological developments.

iii. AECD Documentation, Approval, and Review. Beginning with MY2021, Defendants' shall require their Certification department to conduct checks of ECU datasets as an independent check that calibration values in the dataset match the values disclosed in AECD disclosure documentation to be submitted to EPA and CARB for vehicles intended to be certified as light- and medium-duty gasoline and diesel vehicles in the United States.

i. Lifecycle Management Control.

i. Tracking and Recording of Certified Configuration. Beginning with MY2021, Defendants shall require their Certification department to retain certified software configurations for vehicles issued Certificates of Conformity as light-duty and medium-duty vehicles in the United States or Executive Orders in California in a centralized database.

ii. Software Change Process. Defendants shall require that all software changes to ECUs, TCUs, DCUs, or CPCs in light- and medium-duty vehicles issued Certificates of Conformity or Executive Orders be submitted to, and approved, or not approved by their Certification department.

iii. By December 31, 2019, and continuing thereafter, Defendants shall have their Certification department conduct a dataset check of

all proposed software changes to emissions-relevant functions in light-duty vehicle ECUs, TCUs (NAG3, 7-DCT, and 8-DCT), DCUs, or CPCs issued Certificates of Conformity or Executive Orders, in which that department will compare the software datasets before and after the proposed change to ensure that any proposed change is accurately described in the submissions to regulatory authorities.

- iv. By December 31, 2020, and continuing thereafter, Defendants shall have their Certification department conduct a dataset check of all proposed software changes to emissions-relevant functions in medium-duty vehicle ECUs, TCUs (NAG3, 7-DCT, and 8-DCT), DCUs, or CPCs issued Certificates of Conformity or Executive Orders, in which that department will compare the software datasets before and after the proposed change to ensure that any proposed change is accurately described in the submissions to regulatory authorities.

- v. Field Software Control. By December 31, 2019, Defendants shall have their tCMS R&D department select and conduct sample checks of the software configurations of three vehicles certified as light- or medium-duty gasoline models in the field in the United States to determine whether such software configurations are consistent with each vehicle's certified configuration and confirm

that any changes to the certified configuration were made in accordance with regulatory requirements.

- vi. Beginning with MY2020, and continuing thereafter, Defendants shall require their tCMS R&D department to randomly select and conduct sample checks of vehicle software configurations of vehicles certified as light- or medium-duty in the field in the United States to determine whether such software configurations are consistent with each vehicle's certified configuration as reported to EPA and CARB, and to confirm that any changes to the certified configuration were made in accordance with United States and California regulatory requirements, as applicable.

31. Reporting of Corporate Compliance. Defendants shall report on their compliance with Paragraphs 20–30 on an annual basis consistent with the requirements of Section IX (Reporting). Any violations of Paragraphs 20–30 shall be reported in the semi-annual reports consistent with the requirements of Section IX (Reporting). Defendants shall report on any audits undertaken pursuant to Paragraphs 32 or 33 consistent with those requirements of this Consent Decree. In reports submitted to EPA, and only in the copy of a report sent to EPA, Defendants shall exclude any material dealing with this Section VII (Corporate Compliance), with the exception of information required by Paragraphs 30.h.i and 30.h.ii, which shall be submitted to EPA.

32. Internal Audits.

- a. Defendants shall maintain the organizational independence of their Corporate Audit by continuing to have the department report to the

Chairman of the BoM, the BoM member for IL, and, in addition to the Audit Committee of the Supervisory Board. This reporting is governed by Defendants' Corporate Audit Charter and must comprise both periodic and ad-hoc reporting, and ensure direct access to the ultimate governing and supervisory bodies of Defendants' present and any future corporate structure. Defendants will also maintain the organizational independence of their Corporate Audit by continuing to maintain a structure where Corporate Audit sets its budget with the ultimate oversight of the Audit Committee and in which Corporate Audit selects its own issues for audits, determines the scope of those audits, and adopts methods necessary for accomplishing its audit objectives.

- b. By September 1, 2020, Defendants shall designate an audit department with audit teams within Corporate Audit dedicated specifically to environmental compliance and tCMS, hereinafter the Post-Settlement Audit Team ("PSAT"). The PSAT shall have the expertise, responsibility, independence, and authority to assess environmental compliance with United States and California regulations and laws concerning vehicle emissions and certification. Defendants shall ensure that personnel on these audit teams have and retain the capability and qualifications to evaluate Defendants' tCMS and R&D processes, certification activities, and software development and, as necessary, have the ability to retain internal or external technical consultants to assist in an audit. Defendants shall ensure that all current and future PSAT members and all external

technical consultants are free from conflicts of interest regarding former employment, contract, or consulting work for suppliers listed as required by Paragraph 28.e.

- c. Defendants shall select the leader of the PSAT in consultation with the United States and California. The PSAT leader shall have the expertise, responsibility, independence, and authority to direct and supervise the activities of the PSAT.
- d. The PSAT, through the PSAT leader, shall report directly to the Committee for Legal Affairs of the Daimler AG Supervisory Board (the “Committee for Legal Affairs”) in addition to the BoM member for IL. The PSAT leader’s reporting must comprise both periodic and ad-hoc reporting, and ensure direct access to the ultimate governing and supervisory bodies of Defendants’ present and any future corporate structure. Regardless of any future corporate structure, Defendants shall ensure that the PSAT continues to function as described herein, with all relevant authority and obligations. The Committee for Legal Affairs shall have authority to direct and supervise the PSAT. The removal or discipline of the PSAT leader or PSAT members shall be subject to the approval of the Committee for Legal Affairs. No member of the BoM shall have the authority to direct or restrict the activities of the PSAT, or to remove or discipline the PSAT leader or PSAT members, without approval of the Committee for Legal Affairs.
- e. The PSAT shall operate under the terms of this Consent Decree until the

PSAT has submitted a fourth Audit Report pursuant to Paragraph 32.n.

- f. Beginning on the Effective Date the PSAT shall, on a risk basis, identify in annual Audit Plans aspects of the following to audit, and shall complete said audits:
 - i. the design, implementation status, and effectiveness of relevant tCMS processes, including certification processes, software development, compliance with United States and California environmental regulations and certification limits concerning vehicle emissions and certification;
 - ii. compliance with the terms of this Consent Decree, and
 - iii. the capabilities of individuals or organizational units to carry out tasks assigned to them regarding tCMS processes or compliance with the terms of this Consent Decree.

- g. The first annual audit shall include a review of the process used by Defendants to develop proposed Emission Modification Configurations and draft Emission Modification Proposal Reports pursuant to Appendix B of this Consent Decree. The audit shall specifically include a review of the coordination between the Mercedes-Benz Passenger Cars and Mercedes-Benz Van organizational units and any other organizational unit with responsibilities under Appendix B to ensure development of full and complete Emission Modification Proposal Reports, and it shall evaluate the accuracy of Emission Modification Proposal Reports already submitted to the United States, EPA, and CARB.

- h. As described in Paragraph 33.e, Audit Plans shall be submitted to the Committee for Legal Affairs. No member of the BoM shall have the authority to direct or control the content of Audit Plans.
- i. The PSAT shall conduct audits based on:
 - i. the review of relevant documents and procedures, including anonymous feedback submitted through the BPO, and awareness of United States and California laws and regulations concerning vehicle emissions and certification;
 - ii. on-site observation of selected systems and procedures, including internal controls and record-keeping procedures;
 - iii. meetings with and interviews of relevant employees;
 - iv. analyses, studies, and testing of Defendants' environmental compliance under United States and California laws and regulations concerning vehicle emissions and certification and tCMS, including the review of software;
 - v. all standards and guidance for internal auditing as applicable provided by the Institute for Internal Auditors; and
 - vi. any reporting conducted by Defendants to the United States or California pursuant to the terms of this Consent Decree.
- j. The PSAT, as a part of Corporate Audit, shall have unrestricted access to all relevant corporate information, including but not limited to records, property, IT systems including software, and personnel.
- k. The PSAT shall complete the first audit (*i.e.*, completion of the final audit

in a series of audits) within one year of the Effective Date, and shall complete each subsequent audit (*i.e.*, completion of the final audit in a series of audits) on a recurring annual basis from the date of the first Audit Report under Paragraph 32.n.

1. After the completion of the annual audit year (*i.e.*, after completion of the final audit in a series of audits within an audit year), the PSAT shall produce an Audit Report which contains:
 - i. a description of the audit or audits, including a description of the purpose of each audit;
 - ii. who conducted each audit, including the competencies of the members of the PSAT;
 - iii. how each audit was conducted including the information obtained and reviewed, and, if applicable, a description of any information that was unavailable;
 - iv. the results, conclusions and recommendations of any such audits;
 - v. to whom within Defendants' organization the results of such audits were provided;
 - vi. if applicable, whether previous audit recommendations were adopted and corrective measures timely taken and whether any previous audit concerns remain;
 - vii. any recommended changes or enhancements to the audits; and

- viii. a declaration signed by two signatories, including the PSAT leader, that the audit was conducted in accordance with this Consent Decree.
- m. As described in Paragraph 33.f, within 30 Days after the completion of the final audit in a series of audits within each audit year, the PSAT shall produce a draft annual Audit Report to the Committee for Legal Affairs. No member of the BoM shall have the authority to direct or control the content of Audit Reports or drafts thereof.
- n. Within 60 days after the completion of each annual audit year the PSAT shall submit to the United States and California a final annual Audit Report, pursuant to Section XVI (Notices).
- o. The Committee for Legal Affairs shall submit, along with each annual Audit Report, a declaration, signed by each member of the Committee for Legal Affairs, regarding the efficacy of the PSAT's activities and Defendants' compliance with the Consent Decree, based on the annual audit(s).
- p. Within 60 days after receiving a final annual Audit Report containing a finding of noncompliance, Defendants shall submit a response to the PSAT that contains recommendations and a schedule for corrective action. Such schedule shall include an action plan to implement corrective measures as expeditiously as practicable, or an explanation of why corrective measures are not being implemented or, in the case of previous recommendations, corrective measures were not timely implemented.

Defendants shall implement any such corrective measures. After Defendants have completed implementation of the corrective measures, if any, Defendants shall provide, pursuant to Section XVI (Notices), a report to the United States and California with a certification that the work has been completed and that the work was conducted in accordance with the terms of this Consent Decree, as applicable, and consistent with the Audit Report and Defendants' response.

- q. The PSAT shall coordinate and communicate on a regular basis with the Committee for Legal Affairs.
- r. The PSAT shall consider any comments received from the United States or CARB in developing annual Audit Plans.

33. External Compliance Consultant.

- a. Within 180 Days after the Effective Date, the Committee for Legal Affairs shall select and retain an individual to serve as the External Compliance Consultant ("ECC") to the Committee for Legal Affairs. The ECC shall advise and assist the Committee for Legal Affairs as the Committee for Legal Affairs fulfills its obligations under Paragraph 32. Within Defendants' organization, the ECC shall report solely to the Committee for Legal Affairs.
- b. Selection and Retention. Defendants shall:
 - i. Request that ECC candidates submit a resume, biographical information, and any relevant material concerning each of the candidate's competence and qualifications to serve as the ECC;

- ii. Request that ECC candidates describe any past, present, or future business or financial relationship that the candidate has with Defendants, Defendants' suppliers or contractors, EPA, or CARB. The ECC shall not be an employee or an agent of Defendants, Defendants' subsidiaries, the United States or California, nor will he or she be currently engaged in any work for, or in representation of, Defendants;
 - iii. Verify that, to Defendants' best knowledge and based on the reasonably available information, either the ECC candidate has no conflicts of interest with regard to this matter or any actual or apparent conflict has been waived by Defendants;
 - iv. Verify that the ECC candidate has agreed not to be employed by Defendants, or Defendants' subsidiaries, for a minimum of two years after conclusion of work as the ECC; and
 - v. Retain the ECC until the PSAT has submitted its final annual Audit Report.
- c. Compensation. Defendants shall be responsible for compensating the ECC in accordance with the terms agreed upon by the Committee for Legal Affairs of the Supervisory Board and the selected ECC and at a level of compensation and resources sufficient for the ECC to perform the duties outlined herein. Such terms of agreement shall state that the ECC is retained by the Daimler AG Supervisory Board, but is not an employee of Defendants.

- d. Role, Duties, and Access Rights. The ECC shall be retained to advise and assist the Committee for Legal Affairs acting in its role supervising the PSAT's activities pursuant to Paragraph 32. The ECC shall provide objective and fair assessments of the PSAT's activities under Paragraph 32 and Defendants' compliance with the terms of this Consent Decree to the Committee for Legal Affairs. The ECC shall promptly report to the Committee for Legal Affairs any violations of this Consent Decree. The PSAT shall fully cooperate with the ECC in exchanging relevant information in a timely manner.
- e. Prior to conducting an audit under Paragraph 32, the PSAT shall submit each annual Audit Plan to the Committee for Legal Affairs. The ECC shall review each Audit Plan and provide recommendations to the Committee for Legal Affairs within 30 Days. The Committee for Legal Affairs shall have the discretion whether to adopt such recommendations and whether to require modifications to the annual Audit Plan. Upon request, Defendants shall provide the United States a copy of any formal ECC recommendations, and a report on whether the Committee for Legal Affairs required modifications to the annual Audit Plan. Defendants shall provide CARB a copy on any ECC recommendations within 30 days of the receipt by the Committee for Legal Affairs, and a subsequent report on whether the Committee required modifications to the annual Audit Plan.
- f. The PSAT shall produce draft Audit Reports to the Committee for Legal Affairs within 30 Days of completion of the final audit in a series of audits

within an audit year. The ECC shall review such draft Audit Reports and provide to the Committee for Legal Affairs any recommendations for modification regarding the content of the Audit Report or subsequent activities undertaken by the PSAT pursuant to Paragraph 32. The Committee for Legal Affairs shall have the discretion whether to adopt such recommendations and whether to require modifications or amendments to the Audit Report. The PSAT shall produce final Audit Reports to the Committee for Legal Affairs when it submits such Reports to the United States and California pursuant to Paragraph 32.n. Upon request, Defendants shall provide the United States or California any formal ECC recommendations on draft Audit Reports and a report on whether the Committee for Legal Affairs required modifications or amendments to an Audit Report.

- g. The Committee for Legal Affairs shall require full transparency from the PSAT with regard to its activities and findings under Paragraph 32. Additionally, the Committee for Legal Affairs may, at its discretion, empower the ECC to review this information. In such circumstances, the ECC shall report any observations or recommendations to the Committee for Legal Affairs. The Committee for Legal Affairs shall have the discretion whether to adopt such recommendations. Upon request, Defendants shall provide the United States or California any formal ECC recommendations on PSAT activities and a report on whether the Committee for Legal Affairs adopted any ECC recommendations.

34. The Committee for Legal Affairs may otherwise request the assistance of the ECC in the course of carrying out its supervisory duties under Paragraph 32.

VIII. MITIGATION

35. U.S. Mitigation Program. As set forth in this Section, Defendants shall mitigate NO_x emissions from Subject Vehicles (other than NO_x emissions from Subject Vehicles in California), by implementing a program to reduce emissions from older locomotives (the “U.S. Mitigation Program”).

- a. Pursuant to the U.S. Mitigation Program, by no later than 40 months from the Effective Date, Defendants shall fund, in whole, the repowering of 15 unregulated, Tier 0, Tier 0+, Tier 1, or Tier 1+ line-haul locomotives as defined in 40 C.F.R. § 1033.901. “Repowering” refers to replacing the existing engines with engines certified to EPA Tier 4 or more stringent locomotive emission standards. Defendants may satisfy this obligation by funding the repowering aspect of a locomotive rebuild. “Rebuild” refers to the complete down-to-frame rebuild of the entire locomotive.
- b. These projects shall be referred to as “Environmental Mitigation Projects.” Defendants shall provide evidence of the progress and completion of Environmental Mitigation Projects and other information as set forth in Paragraph 42.c.i. Defendants’ implementation of the U.S. Mitigation Program will be deemed to fully mitigate the total lifetime excess NO_x emissions from Subject Vehicles in the United States, excluding California, as claimed by the United States.
- c. Selection Criteria. Defendants or their implementing Third Party or Third

Parties shall use the following selection criteria when implementing the U.S. Mitigation Program.

- i. In selecting line-haul locomotives, Defendant shall use reasonable best efforts to preferentially repower/rebuild locomotives that are likely to run long distances to geographically diverse locations across the continental United States, except that Defendants shall not be required to repower/rebuild locomotives located in or traveling to California.
- ii. In selecting suppliers or manufacturers of Tier 4 engines, or when selecting recipients of the engines: (1) Defendants shall not preferentially select manufacturers that are Daimler-AG controlled entities over other manufacturers or suppliers; and (2) Defendants shall use reasonable best efforts to not preferentially select public or governmental entities over private entities.

36. Defendants, in their sole discretion, may satisfy the obligations in Paragraph 35 by funding Environmental Mitigation Projects that are to be implemented by one or more state, local, tribal, independent non-profit organizations, or other third party entities (each a “Third Party”). If Defendants use a state, local, tribal, or independent non-profit organization to implement an Environmental Mitigation Project, Defendants shall require the state, local, tribal, or independent non-profit organization to identify, in writing: (1) its legal authority for accepting such funding; and (2) its legal authority to conduct the Environmental Mitigation Project for which Defendants contribute the funds. The use of a Third Party to carry out the requirements herein shall in no way alter the Defendants’ obligations under the Consent Decree. In selecting a

Third Party or Third Parties, Defendants shall consider whether a bidding or application program would ensure a fair process and would be practical. If Defendants undertake such a bidding or application program, the deadlines for implementation of the U.S. Mitigation Program contained in Paragraph 35 shall be amended so that Defendants must implement the U.S. Mitigation Program by repowering/rebuilding 15 locomotives by no later than 45 months from the Effective Date.

37. Defendants shall require, or shall instruct any Third Parties to require, that any recipients receiving funds or equipment under the U.S. Mitigation Program shall provide to Defendants or to the Third Party a written certification that the recipient will, within a reasonable time, permanently destroy or salvage for parts the replaced locomotive engines upon acceptance of such funds or equipment. For avoidance of doubt, the crankshaft and block shall be destroyed.

38. In the event that Defendants determine that it is impractical to complete the U.S. Mitigation Program identified in Paragraph 35, Defendants shall notify the United States in accordance with Section XVI. Within 21 Days of providing notice, Defendants shall submit to the United States a supplemental mitigation plan (“Supplemental Mitigation Plan”) for review and approval in accordance with Section V (Approval of Submissions; U.S./CARB Decision-Making). The Supplemental Mitigation Plan shall provide:

- a. A description of the proposed Supplemental Mitigation Project(s);
 - b. A plan for implementing the Supplemental Mitigation Project(s);
 - c. A proposed number of Supplemental Environmental Project(s) to conduct;
- and

- d. The proposed schedule for implementation of the Supplemental Mitigation Plan.

39. The United States shall respond to Defendants' proposed Supplemental Mitigation Plan pursuant to Paragraph 13 within 30 Days. If the United States fails to make a determination within 30 Days of receipt of the proposal, Defendants may, at their discretion, consider the plan to be denied for the purpose of invoking Dispute Resolution pursuant to Section XII (Dispute Resolution) of this Consent Decree. The Parties shall otherwise adhere to the requirements set forth in Section V (Approval of Submissions; U.S./CARB Decision-Making). Upon approval, conditional approval, or partial approval by the United States, Defendants shall implement the Supplemental Mitigation Plan according to the schedule for implementation contained therein. Such a schedule for implementation shall supersede the schedule for implementation contained in Paragraphs 35 and 36.

40. Defendants shall continue to implement the U.S. Mitigation Program and submit semi-annual reports under Paragraph 42.c.i until evidence is provided that 15 line-haul locomotives have been repowered in accordance with Paragraph 35.a.

41. California Mitigation Program. Defendants have entered into a separate agreement with California, which is intended to fully mitigate the total lifetime excess NO_x emissions from the Subject Vehicles in California as claimed by California. That agreement is set forth in a separate proposed consent decree between Defendants and California (the "California Partial Consent Decree") that has been lodged contemporaneously with this Consent Decree.

IX. REPORTING REQUIREMENTS

42. Consent Decree Compliance Reports. Defendants shall submit separate semi-annual Consent Decree compliance reports to the United States, EPA, and CARB that include the content specified in the subparagraphs below. An agency shall not receive the content of a subparagraph unless the agency is specifically identified in the subparagraph or the agency otherwise requests the content.

a. Emission Modification Program.

- i. To CARB only: Each Eligible Vehicle, listed by Emission Modification Category, VIN, Model, Model Year, and Test Group that has received an Approved Emission Modification in California and the date of such modification pursuant to Appendix A, Paragraph 3 (Modification of Eligible Vehicles with Approved Emission Modification) since the last semi-annual report submitted by Defendants, which information shall be reported in an Excel data spreadsheet;
- ii. To CARB only: Defendants' progress toward reaching the California Passenger Vehicle EMP Rate and California Sprinter EMP Rate since the last semi-annual report submitted by Defendants;
- iii. To CARB only: Each Subject Vehicle registered in California at the time of the report, listed by Emission Modification Category, VIN, Model, Model Year, and Test Group that, based on current information available to Defendants, has been resold or, exported,

and the date of such resale or export, pursuant to Appendix A, Paragraph 6 (Resale and Export of Subject Vehicles) since the last semi-annual report submitted by Defendants, or which has been rendered permanently inoperable or destroyed, and the date of such rendering or destruction since the last semi-annual report submitted by Defendants, which information shall be reported in an Excel data spreadsheet;

- iv. To CARB only: Any Eligible Vehicle by Emission Modification Category, VIN, Model, Model Year, and Test Group for which the Approved Emission Modification was sought by an Eligible Owner or Eligible Lessee in California, but not applied, and the date on which the modification was sought, pursuant to Appendix A, Paragraph 8 (Grounds for Refusal to Apply the Modification to an Eligible Vehicle), and the grounds for Defendants' decision not to install the Approved Emission Modification since the last semi-annual report submitted by Defendants, which information shall be reported in an Excel data spreadsheet;
- v. To CARB only: A compilation of all notices and information distributed to Eligible Owners or Eligible Lessees in California pursuant to Appendix A, Paragraph 15 (Consumer Emission Modification Disclosure) since the last semi-annual report submitted by Defendants, including any updates to the public

website specified in Appendix A, Paragraph 16 (Online Access to Information);

- vi. To CARB only: A compilation of all notices and information distributed to Dealers in California pursuant to Appendix A, Paragraph 17 (Dealer Disclosures) since the last semi-annual report submitted by Defendants;
- vii. To the United States, EPA, and CARB: Additionally, Defendants shall provide the United States, EPA, and CARB with any information reasonably requested and in the possession of Defendants related to Defendants' compliance with the Emission Modification Program requirements within 30 Days of the request by the agency or agencies, or longer with the requesting Party's agreement. Defendants shall provide the information only to the requesting agency or agencies.
- viii. To the United States, EPA, and CARB: For each of the National Sprinter EMP Rate, the National Passenger Vehicle EMP Rate, the California Sprinter EMP Rate, and the California Passenger Vehicle EMP Rate, in the semi-annual Consent Decree compliance report following the earlier of the applicable date specified in Appendix A, Paragraph 4 or the date Defendants meet the respective EMP Rate, Defendants shall provide an assessment as to whether Defendants have met the respective EMP Rate, and they shall provide a list in an Excel data spreadsheet, by VIN and

separated by vehicles located within California and outside of California, of: (1) every Subject Vehicle that Defendants assert has received an AEM under the terms of this Consent Decree; (2) every Subject Vehicle that Defendants assert has been permanently removed from commerce; and (3) every Subject Vehicle that Defendants assert has been purchased by Defendants by the date specified in Appendix A, Paragraph 4.

b. In-Use Testing.

- i. To EPA and CARB: A summary of all activities since the last semi-annual report submitted by Defendants, if any, relating to in-use testing under Paragraph 19, including the selection and screening of Subject Vehicles, in-use verification testing of IUVT Vehicles, and in-use confirmatory testing of IUCP Vehicles.
- ii. To EPA and CARB: Any data required by Paragraph 19.a and Paragraph 19.b.i.A.

c. Mitigation.

- i. Defendants shall submit to the United States semi-annual reports that identify the number of Environmental Mitigation Projects in progress and completed by the date of the submission of each semi-annual report.
- ii. The parties agree that until termination of the Consent Decree in accordance with Section XX, any information submitted under Section VIII that provides the identity or any identifying

information of any Third Party or locomotive owner, as well as any information reported pursuant to Paragraph 42.c.i, shall be treated as CBI, provided that Defendants follow the procedures set forth in Paragraph 84 and 40 C.F.R. Part 2. Further, Defendants shall take reasonable measures to protect the confidentiality of such information.

iii. Additional Certification. In the first semi-annual report required by Paragraph 42.c.i, Defendants shall certify in accordance with Paragraph 48 that:

- A. They are not required to perform the U.S. Mitigation Program by any federal, state, or local law or regulation or by any agreement, grant, or as injunctive relief awarded in any other action in any forum;
- B. Defendants are unaware of any other person who is required by law to, or, as of the Date of Lodging, otherwise planned or intended to, construct, perform, or implement the U.S. Mitigation Program.
- C. The U.S. Mitigation Program is not a project that Defendants were planning or intending to construct, perform, or implement other than in settlement of the claims resolved in the Consent Decree;

D. Defendants have not received and will not receive credit for the U.S. Mitigation Program in any other enforcement action; and

E. Defendants will not receive any reimbursement for any of the costs they expend implementing the U.S. Mitigation Program from any person, except to the extent that Defendants reimburse each other for the costs of implementing the U.S. Mitigation Program.

d. Data. All data shall be reported using the number of significant figures in which the pertinent standard, limit, or requirement is expressed.

43. Timing of Reports. Unless otherwise specified in this Consent Decree, or the Parties otherwise agree in writing:

- a. To the extent semi-annual or annual reporting is required under this Consent Decree, Defendants shall submit each report one month after the end of the applicable prior six-month period (*i.e.*, by January 31 or July 31) or annual calendar period (*i.e.*, by January 31), that shall cover the prior six-month period or prior annual calendar period, respectively, and the items specified elsewhere in this Consent Decree.
- b. The first report shall be due by the last Day of the month following the end of the first six-month period, or annual calendar period, as applicable, after this Consent Decree is entered. However, if this Consent Decree is entered fewer than 45 Days before the end of the first six-month period, the first report shall not be due until the last Day of the month following

the end of the second six-month period after entry. Reporting shall continue until this Consent Decree is terminated in accordance with Section XX (Termination).

44. Reporting of Violations.

- a. Reporting of Violations. If Defendants violate, or reasonably believe they may violate, a requirement of this Consent Decree for which a stipulated penalty applies under Paragraph 53, and Defendants have not remedied or will not remedy the violation within ten Business Days of the Day Defendants reasonably learn that the violation occurred or may occur, Defendants shall notify the United States and CARB of such violation and its likely duration, in writing, within ten Business Days of the Day Defendants first reasonably learn that the violation occurred or may occur, with an explanation of the violation's likely cause. Within an additional four Business Days, Defendants shall notify the United States and CARB in writing of the remedial steps taken, or to be taken, to prevent or minimize such violation, and the dates on which such remedial steps are to be, or have been taken. If Defendants believe the cause of a violation cannot be fully explained at the time the report is due, Defendants shall so state in the report. Defendants shall investigate the cause of the violation and shall then submit an amendment to the report, including a full explanation of the cause of the violation, within 30 Days of the Day Defendants reasonably believe they have determined the cause of the violation. Nothing in this Paragraph or the following Paragraph relieves

Defendants of their obligation to provide the notice required by Section XI (Force Majeure).

- b. Semi-Annual Report of Violations. On January 31 and July 31 of each year, Defendants shall submit a summary to the United States and CARB of any violations of this Consent Decree that occurred during the preceding six months (or potentially shorter period for the first semi-annual report). The summary shall include: (1) the date of the violation; (2) a brief description of the violation; (3) a brief description of steps taken to remedy the violation; and (4) for violations Defendants are required to report under Paragraph 44.a, a list of violations previously reported and the date the notice of violation was sent. If no violations occurred during the reporting period, Defendants shall submit a statement that no violations occurred.

45. Whenever Defendants reasonably believe any violation of this Consent Decree or any other event affecting Defendants' performance under this Consent Decree may pose an immediate threat to the public health or welfare or the environment, Defendants shall notify EPA and CARB by telephone and email as soon as possible, but no later than 24 hours after Defendants first reasonably believe the violation or event may pose an immediate threat to the public health or welfare or the environment. This procedure is in addition to the notice requirements set forth in Paragraph 44.

46. Unless specified elsewhere in this Consent Decree, all reports shall be submitted to the persons designated in Section XVI (Notices).

47. All information required to be posted to a public web page by this Consent Decree shall be accessible on the public web page that Defendants use to administer the Emission Modification Program pursuant to Appendix A, Paragraph 16, and a link to such web page shall be accessible from Defendants' primary consumer website in the United States. This web page link shall be provided to EPA and CARB with Defendants' signature pages to this Consent Decree, and Defendants shall send any new web page link to EPA and CARB within ten Business Days if the web page is moved.

48. Each report submitted by Defendants under this Section shall be signed by an officer or Director of the submitting party and include the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, correct, and complete. I have no personal knowledge that the information submitted is other than true, correct, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

49. Defendants agree that the certification required by Paragraph 48 is subject to 18 U.S.C. §§ 1001(a) and 1621, and California Penal Code §§ 115, 118, and 132.

50. The certification requirement in Paragraph 48 does not apply to emergency or similar notifications where compliance would be impractical.

51. The reporting requirements of this Consent Decree do not relieve Defendants of any reporting obligations required by the Act or implementing regulations, or by any other federal, state, or local law, regulation, permit, or other requirement.

52. Any information provided pursuant to this Consent Decree may be used by the United States or California in any proceeding to enforce the provisions of this Consent Decree and as otherwise permitted by law.

X. STIPULATED PENALTIES

53. Defendants shall be liable for stipulated penalties to the United States and California for violations of this Consent Decree as specified in this Section, unless excused under Section XI (Force Majeure). There shall be only one stipulated penalty assessed per violation against the Defendants, for which they shall be jointly and severally liable. A violation includes failing to perform any obligation required by the terms of this Consent Decree, including any work plan or schedule approved under this Consent Decree, according to all applicable requirements of this Consent Decree and within the specified time schedules established by or approved under this Consent Decree.

- a. Late Payment of Civil Penalty. If Defendants fail to pay the civil penalty required under Section IV (Civil Penalty) of this Consent Decree when due, Defendants shall pay stipulated penalties as follows for each Day the payment is late:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
Interest	1st through 4th Day (per 28 U.S.C. § 1961)
\$50,000	5th through 30th Day
\$100,000	31st through 45th Day
\$200,000	46th Day and beyond.

- b. Injunctive Relief Requirements: Section VI, Paragraph 18 (Emission Modification Program), Appendices A and B, and their Attachments.

- i. Failure to Establish Emission Modification Program Call Center.

If Defendants fail to establish and maintain an Emission

Modification Program call center as required by Appendix A, Paragraph 1, Defendants shall pay the following stipulated penalties for each Day that the call center is delayed:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$500	1st through 10th Day
\$4,000	11th through 30th Day
\$15,000	31st Day and beyond.

- ii. Failure to Establish Emission Modification Program Website. If Defendants fail to establish and maintain a website for the Emission Modification Program as required by Appendix A, Paragraphs 1 and 16, Defendants shall pay the following stipulated penalties for each Day the website is not maintained:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th Day
\$10,000	15th through 30th Day
\$50,000	31st Day and beyond.

- iii. Failure to Timely Initiate Offer of AEM. If Defendants fail to make an Approved Emission Modification available within 15 Business Days of the date specified in Appendix A, Paragraph 15.a, Defendants shall pay the following stipulated penalties for each Day the offer is delayed:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$10,000	1st through 14th Day
\$20,000	15th through 30th Day
\$35,000	31st Day and beyond.

- iv. Early Termination of Emission Modification Program. If Defendants terminate an Emission Modification Program for any

Eligible Vehicle prior to the date specified in Appendix A, Paragraph 7 (15 years after the Model Year of the Subject Vehicle or 8 years after the approval of the applicable Approved Emission Modification), Defendants shall pay the following stipulated penalty for each Day on which the Emission Modification Program should have been offered but was not:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$4,000	1st through 30th Day
\$10,000	31st through 60th Day
\$20,000	61st Day and beyond.

- v. Failure to Provide Emission Modification Program Disclosures. If Defendants fail to execute the disclosures as required by Appendix A, Paragraph 15 or Paragraph 17, Defendants shall pay the following stipulated penalties for each Day such disclosure is not provided:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th Day
\$5,000	15th through 30th Day
\$10,000	31st Day and beyond.

- vi. Misleading Disclosures or Advertisements. If Defendants provide any materially misleading or inaccurate disclosure to any Eligible Owner or Eligible Lessee regarding the individual owner or lessee's rights or available remedies under the Emission Modification Program, including, but not limited to, any rights or available remedies under the Warranty provisions set forth in

Appendix A, Paragraphs 18–20, Defendants shall have 30 Days to correct such disclosure after EPA or CARB advise Defendants that the disclosure is materially misleading or inaccurate. If Defendants fail to correct the disclosure within 30 Days after such notification, the following stipulated penalty shall apply per Day the disclosure is not corrected after the 30 Days:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$10,000	1st through 14th Day
\$25,000	15th through 30th Day
\$50,000	31st Day and beyond.

- vii. Failure to Comply with Labeling Requirements. If Defendants fail to ensure that any Eligible Vehicle that receives the Approved Emission Modification is affixed with a label, as required by Appendix A, Paragraph 13, before such vehicle is sold, leased, offered for sale or lease, otherwise introduced into commerce, or returned to the Eligible Owner or Eligible Lessee, or if the information included in any such label is incorrect, Defendants shall pay a stipulated penalty of \$1,000 per label, per vehicle, provided that no stipulated penalty shall accrue for the first 15 Days that the label is not affixed.
- viii. No Release of Private Party Claims. If Defendants require any release of liability for any legal claims that an Eligible Owner or Eligible Lessee may have against Defendants or any other person solely in exchange for receiving the Approved Emission

Modification, or if Defendants require any customer payment or release of any Eligible Owner's or Eligible Lessee's right in exchange for performing the Approved Emission Modification, in violation of Appendix A, Paragraphs 7 and 11, Defendants shall pay a stipulated penalty of \$7,500 per affected vehicle.

ix. Failure to Honor Warranties.

A. If Defendants fail to honor or cause any Dealer to fail to honor the Extended Modification Warranty described in Appendix A, Paragraph 18, Defendants shall pay a stipulated penalty of \$20,000 for each vehicle for which the Extended Modification Warranty was not properly honored. In addition, Defendants shall reimburse the affected Eligible Owner or Eligible Lessee any amount paid by the Eligible Owner or the Eligible Lessee to Defendants or to a Dealer because of the failure to honor the Extended Modification Warranty. Defendants' liability for stipulated penalties for failure to honor the Extended Modification Warranty shall not accrue unless and until there have been 100 instances of action or inaction that would give rise to a stipulated penalty. Once the threshold number of instances is reached, Defendants shall be liable for every instance of failure to honor the Extended Modification Warranty.

B. Notwithstanding the requirements of Paragraph 53.b.ix.A above, if the requirements of Paragraph 18.a and 18.b are satisfied, Defendants shall not be liable for any stipulated penalty for failure to honor the Extended Modification Warranty described in Appendix A, Paragraph 18, unless and until the Class Action Settlement claims review committee considers and finally adjudicates a warranty claim dispute and finds in favor of the Eligible Owner or the Eligible Lessee in accordance with the process required in the Class Action Settlement. In such a case, Defendants shall pay a stipulated penalty of \$20,000 for each warranty claim dispute that the Class Action Settlement review committee considers and finally adjudicates in favor of the Eligible Owner or the Eligible Lessee in accordance with the process required in the Class Action Settlement. In addition, Defendants shall reimburse the Eligible Owner or the Eligible Lessee any amount paid by the Eligible Owner or the Eligible Lessee to Defendants or to a Dealer because of the failure to honor the Extended Modification Warranty. Defendants' liability for failure to honor the Extended Modification Warranty shall not accrue until there have been 100 instances in which the Class Action Settlement claims review committee considers and finally

adjudicates a warranty claim dispute in favor of the Eligible Owner or the Eligible Lessee in accordance with the process required in the Class Action Settlement. Once the threshold number of instances is reached, Defendants shall be liable for every instance in which the Class Action Settlement review committee considers and finally adjudicates a warranty claim dispute in favor of the Eligible Owner or the Eligible Lessee in accordance with the process required in the Class Action Settlement.

- x. Penalties for Export, Sale, or Re-Sale of Unmodified Vehicles. If, after the Date of Lodging of this Consent Decree or after the date of approval of the applicable Emission Modification, whichever is later, Defendants sell, lease, introduce into commerce, or cause or arrange for any Dealer or other entity to do the foregoing, or fail to instruct its Dealers not to sell, lease, or introduce into commerce any Subject Vehicle that has not received an Approved Emission Modification in violation of the requirements of Appendix A, Paragraphs 5 or 6, Defendants shall pay \$25,000 per affected Subject Vehicle. If, after the Date of Lodging of this Consent Decree, Defendants export, or fail to instruct Dealers not to export, from the United States to another country, any Subject Vehicle that has not received an Approved Emission Modification in violation of the requirements of Appendix A, Paragraph 6, except where that

Subject Vehicle is exported to Germany as permitted by Appendix A, Paragraph 6, Defendants shall pay \$25,000 per affected Subject Vehicle.

- xi. Failure to Submit a Complete Emission Modification Proposal Report or OBD Interim Report. If Defendants fail to timely submit or resubmit a complete proposed Emission Modification Proposal Report as required under Appendix B, Paragraph 4, or fail to timely submit or resubmit a complete OBD Interim Report as required under Appendix B, Paragraph 3 (which shall include failure to submit any required content in either the Emission Modification Proposal Report or the OBD Interim Report, or to complete testing in accordance with Appendix B), the following stipulated penalties shall accrue for each Day the report remains incomplete:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th Day
\$10,000	15th through 30th Day
\$50,000	31st Day and beyond.

- xii. Failure to Submit an Emission Modification Proposal Report that Meets the Emission Standard, Emission Standard First Threshold, or Emission Standard Upper Threshold. If Defendants’ proposed Emission Modification fails to meet the Emission Standard for the relevant Emission Modification Category, Defendants shall pay the following stipulated penalties per Eligible Vehicle as of the date

specified in Appendix A, Paragraph 4 in that Emission Modification Category (but not per Day):

- (1) below the Emission Standard First Threshold, but above the Emission Standard: \$7,000
- (2) below the Emission Standard Upper Threshold, but above the Emission Standard First Threshold: \$16,000
- (3) above the Emission Standard Upper Threshold: \$25,000.

xiii. Failure to Provide EPA or CARB with Test Vehicles, Equipment,

or Software. If Defendants fail to provide a Test Vehicle,

equipment, or software within 45 Days of a request by

EPA/CARB, as provided in Appendix B, Paragraph 5.b,

Defendants shall pay the following stipulated penalty per Test

Vehicle for each Day the Test Vehicle is not provided:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$5,000	1st through 14th Day
\$20,000	15th through 30th Day
\$50,000	31st Day and beyond.

xiv. Failure to Comply with Prohibition on Defeat Devices. If

Defendants propose to modify, modify, or cause to be modified, a

Subject Vehicle after the Effective Date by updating such vehicle

with a configuration of software and calibrations that contains a

Defeat Device, Defendants must pay a stipulated penalty to the

United States and CARB of \$20,000,000 per Defeat Device (but

not per vehicle).

xv. Failure to Disclose AECDs. If a proposed Emission Modification or Approved Emission Modification includes an AECD that Defendants have not listed and described in the Updated AECD Document for that Emission Modification Category as of the date of submission of the relevant Emission Modification Proposal Report, Defendants shall pay the following stipulated penalties:

- (1) \$1,000,000 per undisclosed AECD that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use (but not per vehicle), and
- (2) \$100,000 per undisclosed AECD that is wholly emissions neutral or that improves the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use (but not per vehicle).

xvi. Failure to Comply with Post-Entry Provisions Related to Modification of the Subject Vehicles Updated with the AEM. If, after implementing the Approved Emission Modification, Defendants fail to follow the procedures in Appendix A, Paragraph 14 for modifying the Subject Vehicles, Defendants shall pay to the United States and CARB a stipulated penalty of:

- (1) \$900,000 for each failure to submit a proposal in accordance with the requirements in Appendix A, Paragraph 14.a (but not per vehicle); and
- (2) \$500,000 for each failure to submit a report to EPA and CARB in accordance with the requirements of Appendix A, Paragraph 14.b (but not per vehicle).

xvii. Failure to Meet the Emission Modification Program Rate. If Defendants fail to achieve an Emission Modification Program Rate by the dates required in Appendix A, Paragraph 4, Defendants shall pay a stipulated penalty of:

- (1) \$9,137,866.78 for each percentage point that the National Sprinter EMP Rate falls short of 85 percent;
- (2) \$6,445,600.34 for each percentage point that the National Passenger EMP Rate falls short of 85 percent;
- (3) \$1,485,665.16 for each percentage point that the California Sprinter EMP Rate falls short of 85 percent; and
- (4) \$1,325,908.64 for each percentage point that the California Passenger EMP Rate falls short of 85 percent.

In calculating any payment under this Paragraph 53.b.xvii, each Emission Modification Program Rate shall be rounded to the nearest percentage point, except that any number between 84 percent and 85 percent shall be considered a one percent shortfall for calculation of the relevant stipulated penalty.

c. Injunctive Relief Requirements: Section VI, Paragraphs 18 and 19 (OBD Requirements).

i. Pre-Approved OBD Noncompliances. Within 30 Days of the Effective Date, Defendants shall pay to CARB \$35,436,600 for the Cluster 1 Pre-Approved OBD Noncompliances and \$7,271,300 for the Cluster 5 Pre-Approved OBD Noncompliances. Within 30

Days of the Effective Date, Defendants shall pay to the United States \$21,804,800 for the Cluster 1 Pre-Approved OBD Noncompliances and \$5,796,000 for the Cluster 5 Pre-Approved OBD Noncompliances. Defendants shall also follow the additional extended warranty provisions of Appendix A, Paragraph 18.d.i.A and with respect to ten Cluster 1 Pre-Approved OBD Noncompliances, as determined by EPA/CARB, and with respect to seven Cluster 5 Pre-Approved OBD Noncompliances, as determined by EPA/CARB.

- ii. Additional OBD Noncompliances. Within 30 Days of EPA/CARB's approval of the Emission Modification Proposal Report of each EMC in an OBD Cluster, Defendants shall pay to CARB the stipulated penalty required under Paragraph 53.c.ii.A or 53.c.ii.B, as applicable, per OBD Noncompliance determined by EPA/CARB in the approval of the Report. In the event that Defendants report any OBD Noncompliance in an Emission Modification Proposal Report of an EMC that was not present in a previously submitted EMC Emission Modification Proposal Report within the same OBD Cluster, Defendants shall pay to CARB the amount provided for under Paragraph 53.c.ii.A or 53.c.ii.B, as applicable, for that newly-reported OBD Noncompliance, even if the number of OBD Noncompliances is the same for each EMC within a Cluster.

A. Class 1 Additional OBD Noncompliances. If EPA/CARB determine that one or more Subject Vehicles fail to comply with the OBD requirements in the applicable version of 13 C.C.R. § 1968.2, and if such failure is not a Pre-Approved OBD Noncompliance under Appendix B, Paragraph 2.f.i.A or a DOC OBD Noncompliance under Paragraph 16 or 17 of the California Partial Consent Decree, and Defendants disclose the failure to comply in the respective Emission Modification Proposal Report for each Emission Modification Category to which the failure to comply applies, such failure shall be known as a Class 1 Additional OBD Noncompliance, and Defendants shall pay to CARB a stipulated penalty per OBD Cluster, per OBD Noncompliance of:

- (1) \$339,900 per OBD Noncompliance for Cluster 2;
- (2) \$214,850 per OBD Noncompliance for Cluster 3; and
- (3) \$224,650 per OBD Noncompliance for Cluster 4.

For avoidance of doubt, this subparagraph also applies if Defendants report any failure to comply in the respective Emission Modification Proposal Report for the Emission Modification Category to which the failure applies that Defendants would also report under Paragraphs 19.a and 19.c.

B. Class 2 Additional OBD Noncompliances. If EPA/CARB determine that one or more Subject Vehicles fail to comply with the OBD requirements in the applicable version of 13 C.C.R. § 1968.2, and if such failure is not a Pre-Approved OBD Noncompliance under Appendix B, Paragraph 2.f.i.A or listed in Appendix B, Attachment L, a Class 1 Additional OBD Noncompliance, or a DOC OBD Noncompliance under Paragraph 16 or 17 of the California Partial Consent Decree, and Defendants disclose the failure to comply in the respective Emission Modification Proposal Report for each Emission Modification Category to which the failure applies, such failure shall be known as a Class 2 Additional OBD Noncompliance, and Defendants shall pay to CARB a stipulated penalty per OBD Cluster, per OBD Noncompliance of:

- (1) \$509,850 per OBD Noncompliance for Cluster 2;
- (2) \$322,275 per OBD Noncompliance for Cluster 3;
- (3) \$336,975 per OBD Noncompliance for Cluster 4; and
- (4) \$337,050 per OBD Noncompliance for Cluster 5.

For avoidance of doubt, this subparagraph also applies if Defendants report any failure to comply in the respective Emission Modification Proposal Report for the Emission Modification Category to which the failure applies that

Defendants would also report under Paragraph 19.a.

iii. Unreported OBD Noncompliances. If EPA and CARB determine that one or more Subject Vehicles fail to comply with the OBD requirements in the applicable version of 13 C.C.R. § 1968.2 and Defendants do not disclose such failure to comply in the Emission Modification Proposal Report for each Emission Modification Category, and if such failure is not a Pre-Approved OBD Noncompliance, Class 1 or Class 2 Additional OBD Noncompliance, or DOC OBD Noncompliance under Paragraph 16 or 17 of the California Partial Consent Decree, Defendants shall pay to the United States and CARB a stipulated penalty per OBD Cluster, per OBD Noncompliance of:

- (1) \$10,902,400 per OBD Noncompliance for Cluster 1;
- (2) \$3,881,400 per OBD Noncompliance for Cluster 2;
- (3) \$2,271,900 per OBD Noncompliance for Cluster 3;
- (4) \$2,072,000 per OBD Noncompliance for Cluster 4; and
- (5) \$1,932,000 per OBD Noncompliance for Cluster 5.

For avoidance of doubt, this subparagraph also applies in the event that Defendants report any failure to comply under Paragraph 19.a and the failure is not a Pre-Approved OBD Noncompliance, a Class 1 or Class 2 Additional OBD Noncompliance, or a DOC OBD Noncompliance under Paragraph 16 or 17 of the California Partial Consent Decree.

iv. Section 1968.5 OBD Noncompliances. If an Approved Emission Modification fails to comply with the applicable version of 13 C.C.R. § 1968.5(b)(6) (except 13 C.C.R. § 1968.5(b)(6)(C)(ii), (c)(3), (c)(4) (2016), and except for a DOC OBD Noncompliance under Paragraph 16 or 17 of the California Partial Consent Decree), Defendants shall pay to the United States and CARB a stipulated penalty of \$1,000 per Subject Vehicle as of the date in Appendix A, Paragraph 4, per Section 1968.5 OBD Noncompliance, and may, within 30 Days of receiving EPA's and CARB's determination of 13 C.C.R. § 1968.5 Noncompliances, seek EPA's and CARB's approval for a modification related to the Approved Emission Modification under Appendix A, Paragraph 14 to remedy the failure to comply with the applicable version of 13 C.C.R. § 1968.5(b)(6).

v. Inspection and Maintenance Mandatory Recall. If an Approved Emission Modification contains an OBD Noncompliance referenced in the applicable version of 13 C.C.R. § 1968.5(b)(6)(C)(ii), except for a DOC OBD Noncompliance under Paragraph 16 or 17 of the California Partial Consent Decree, Defendants shall pay to the United States and CARB a stipulated penalty per OBD Cluster, per OBD Noncompliance of:

- (1) \$10,902,400 per OBD Noncompliance for Cluster 1;
- (2) \$3,881,400 per OBD Noncompliance for Cluster 2;
- (3) \$2,271,900 per OBD Noncompliance for Cluster 3;

- (4) \$2,072,000 per OBD Noncompliance for Cluster 4;
and
- (5) \$1,932,000 per OBD Noncompliance for Cluster 5.

Additionally, Defendants shall submit to EPA and CARB for review and approval a remedial plan in accordance with 13 C.C.R. § 1968.5(d) to address each Noncompliance, and shall recall each affected Eligible Vehicle consistent with 13 C.C.R. § 1968.5(d) and this Consent Decree. Defendants shall not be subject to the OBD recall provisions if an Eligible Vehicle fails or is otherwise not able to complete the Inspection and Maintenance program because insufficient miles have been accumulated on the vehicle to clear any fault codes or Inspection and Maintenance readiness flags following application of the Approved Emission Modification.

d. Injunctive Relief Requirements: Section VI, Paragraph 19 (Subject Vehicle In-Use Testing).

- i. Failure to Complete In-Use Testing Requirements. If Defendants fail to complete In-Use Testing in accordance with Paragraphs 19.a or 19.b of this Consent Decree, Defendants shall pay to the United States and CARB a stipulated penalty for each Day of such failure:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$5,000	1st through 14th Day
\$20,000	15th through 30th Day
\$50,000	31st Day and beyond.

- ii. Failure to Provide Notice in Advance of In-Use Testing. If Defendants fail to notify EPA/CARB of testing in accordance with Paragraph 19.b.vi (Notification of Testing), Defendants shall pay to the United States and CARB a stipulated penalty for each Day of such failure:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th Day
\$3,000	15th through 30th Day
\$10,000	31st Day and beyond.

- iii. Failure to Comply with Emission Standard, Emission Standard First Threshold, or Emission Standard Upper Threshold. If, as determined in accordance with Paragraph 19.b.v, Eligible Vehicles updated with the Approved Emission Modification fail to meet the Emission Standard, Emission Standard First Threshold, or the Emission Standard Upper Threshold for the relevant Emission Modification Category approved in the Emission Modification Proposal Report for the relevant Emission Modification Category, Defendants shall pay the following stipulated penalties, as applicable, per Eligible Vehicle in that Emission Modification Category (but not per Day):

- (1) below the Emission Standard First Threshold, but above the Emission Standard: \$7,350
- (2) below the Emission Standard Upper Threshold, but above the Emission Standard First Threshold: \$16,800
- (3) above the Emission Standard Upper Threshold: \$26,250.

e. Injunctive Relief Requirements: Section VII (Corporate Compliance).

i. Corporate Compliance Obligations. Defendants shall pay stipulated penalties per Day for each Day that Defendants fail to meet the requirements for compliance with the provisions of Section VII. In the event that a failure to meet a requirement is covered by a specific stipulated penalty listed below, Defendants shall only pay the stipulated penalties as required by that specific subparagraph. If no specific stipulated penalty is listed for a failure to meet a particular requirement, Defendants shall pay stipulated penalties for failing to meet that requirement as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th Day
\$2,500	15th through 30th Day
\$10,000	31st Day and beyond.

ii. Segregation of Duties. Defendants shall pay stipulated penalties per Day for each Day that Defendants fail to implement and maintain any segregation of duty requirement in Paragraph 23 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th Day
\$10,000	15th through 30th Day
\$50,000	31st Day and beyond.

iii. Integrity Code. Defendants shall pay stipulated penalties per Day for each Day that the modification to their Integrity Code is

overdue or is otherwise not in accordance with the requirements in Paragraph 24 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th Day
\$2,500	15th through 30th Day
\$10,000	31st Day and beyond.

- iv. Employee Discipline and Compensation. Defendants shall pay stipulated penalties per Day for each Day that they fail to implement and maintain any employee discipline and compensation requirement in Paragraph 25 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th Day
\$2,500	15th through 30th Day
\$10,000	31st Day and beyond.

- v. Whistleblower System. Defendants shall pay stipulated penalties per Day for each Day that they fail to implement and maintain any BPO system requirement in Paragraph 26 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th Day
\$5,000	15th through 30th Day
\$10,000	31st Day and beyond.

- vi. Risk Assessment. Defendants shall pay stipulated penalties per Day for each Day that they fail to comply with any requirement concerning risk assessments in Paragraph 27 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th Day
\$2,500	15th through 30th Day

\$10,000 31st Day and beyond.

- vii. Business Partner and Supplier Integrity Management. Defendants shall pay stipulated penalties per Day for each Day that they fail to comply with any requirement concerning business partner and supplier integrity management in Paragraph 28 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th Day
\$2,500	15th through 30th Day
\$10,000	31st Day and beyond.

- viii. Compliance Management System and Technical Compliance Management System. Defendants shall pay stipulated penalties per Day for each Day that they fail to comply with any requirement concerning their compliance management system and technical compliance management system in Paragraph 29 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th Day
\$2,500	15th through 30th Day
\$10,000	31st Day and beyond.

- ix. Technical Compliance and Certification Control Measures. Defendants shall pay stipulated penalties per Day for each Day that they fail to comply with any requirement concerning technical compliance and certification control measures, including, but not limited to, PEMs testing, in Paragraph 30 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th Day
\$5,000	15th through 30th Day

\$10,000 31st Day and beyond.

- x. Reporting of Corporate Compliance. Defendants shall pay stipulated penalties per Day for each Day that they fail to report on corporate compliance measures, including, but not limited to, failing to include corporate compliance information in other reports, as required in Paragraph 31 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th Day
\$2,500	15th through 30th Day
\$10,000	31st Day and beyond.

- xi. Internal Audits. Defendants shall pay stipulated penalties per Day for each Day that they fail to comply with any requirement concerning internal audits, including, but not limited to, the implementation of corrective measures, in Paragraph 32 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 30th Day
\$2,500	31st through 60th Day
\$10,000	61st Day and beyond.

- xii. External Compliance Consultant. Defendants shall pay stipulated penalties per Day for each Day that they fail to comply with any requirement concerning the External Compliance Consultant in Paragraph 33 as follows:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 30th Day

\$10,000	31st through 60th Day
\$35,000	61st Day and beyond.

f. Injunctive Relief Requirements: Section VIII (Mitigation).

- i. If Defendants fail to repower or rebuild 15 non-Tier 4 compliant line-haul locomotives as required by Paragraph 35 by the specified deadlines contained in Paragraph 35.a and 36, Defendants shall pay the following stipulated penalties per violation per Day, unless Defendants submit and implement a Supplemental Mitigation Plan pursuant to Paragraphs 38 and 39:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$5,000	1st through 14th Day
\$10,000	15th through 30th Day
\$20,000	31st Day and beyond

- ii. In the event Defendants determine that it is impractical to complete the U.S. Mitigation Program pursuant to Paragraph 38, if Defendants fail to submit a Supplemental Mitigation Plan that complies with the requirements of Paragraph 38, or fail to take all actions required by the Supplemental Mitigation Plan in accordance with the schedules and requirements of the Supplemental Mitigation Plan as required by Paragraph 38, Defendants shall pay the following stipulated penalties per violation per Day, provided that no stipulated penalty shall accrue for failure to take an action required by the Supplemental Mitigation Plan in accordance with the schedules and requirements of the Supplemental Mitigation Plan if Defendants have

resubmitted, in whole or in part, the Supplemental Mitigation Plan as required by Paragraph 38:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$5,000	1st through 14th Day
\$10,000	15th through 30th Day
\$20,000	31st Day and beyond

g. Reporting and Certification Requirements: Section IX (Reporting Requirements).

- i. Timing, Content of Reports. The following stipulated penalties shall accrue per violation per Day for each violation of the requirements of Paragraph 43 (Timing of Reports) and Paragraph 42 (Consent Decree Compliance Reports):

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th Day
\$5,000	15th through 30th Day
\$10,000	31st Day and beyond.

- ii. Reporting of Violations. The following stipulated penalties shall accrue per violation per Day for each violation of the requirements of Paragraph 44 (Reporting of Violations):

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th Day
\$5,000	15th through 30th Day
\$10,000	31st Day and beyond.

- iii. Certification Requirements. For each violation of the certification requirements of Paragraph 48 of this Consent Decree and Appendix B, Paragraph 4.a.i.P, except for false statements as

described in Paragraph 53.g.iv, below, for which the stipulated penalty shall be as provided therein, Defendants shall have one opportunity to self-correct the violation within 15 Days of the applicable Submission, after which time, Defendants shall pay a stipulated penalty of \$200,000 for each violation.

iv. False Statements. Defendants shall pay a stipulated penalty of \$1,000,000 for each Submission required to be submitted pursuant to this Consent Decree that contains a knowingly false, fictitious, or fraudulent statement or representation of material fact.

h. Information Collection and Retention Requirements: Section XIII (Information Collection and Retention).

i. If Defendant Mercedes-Benz USA fails to maintain within the United States a copy of all Records as required to be retained within the United States pursuant to Paragraph 81, Defendants shall pay stipulated penalties per Day for each Day that Defendant Mercedes-Benz USA fails to maintain such Records in the United States:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$2,000	1st through 14th Day
\$5,000	15th through 30th Day
\$10,000	31st Day and beyond.

ii. If Defendants fail to provide the United States or CARB with an unredacted copy of a Record upon request, as required by

Paragraph 82, Defendants shall pay stipulated penalties per Day for each Day that Defendants fail to provide such a Record:

<u>Penalty per Day</u>	<u>Period of Noncompliance</u>
\$1,000	1st through 14th Day
\$2,500	15th through 30th Day
\$10,000	31st Day and beyond.

54. Stipulated penalties shall begin to accrue on the Day after performance is due or on the Day a violation occurs, whichever is applicable, and shall continue to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated penalties shall accrue simultaneously for separate violations of this Consent Decree, provided that there shall be only one stipulated penalty assessed per violation against the Defendants.

55. The United States, in consultation with CARB, shall issue any demand for stipulated penalties in writing to Defendants, except for violations of Paragraph 53.c.ii, for which CARB shall issue any demand for stipulated penalties in writing to Defendants. The written demand for payment of stipulated penalties shall specifically identify the violation.

56. Defendants shall pay any stipulated penalties to the United States and CARB, as applicable, within 30 Days of receiving the written demand. Defendants shall pay 75 percent of the total stipulated penalty amount due to the United States and 25 percent to CARB, except for violations of Paragraphs 53.c.iii to 53.c.v, for which Defendants shall pay 50 percent of the total stipulated penalty amount due to the United States and 50 percent to CARB, and violations of Paragraph 53.c.ii, for which Defendants shall pay the entire stipulated penalty amount to CARB.

57. Either the United States or CARB may in the unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due it under this Consent Decree.

However, no action by either the United States or CARB may reduce or waive stipulated penalties due the other.

58. Stipulated penalties continue to accrue as provided in Paragraph 54 during any dispute resolution period, but need not be paid unless determined to be owing and until the following:

- a. If the dispute is resolved by agreement of the Parties or by a decision of EPA/CARB that is not appealed to the District Court, Defendants shall pay accrued penalties determined to be owing, together with interest as provided in Paragraph 62, to the United States and CARB, as applicable, within 30 Days after the effective date of the agreement or the receipt of EPA's/CARB's decision or order.
- b. If the dispute is appealed to the District Court and the United States/California prevail(s) in whole or in part, Defendants shall pay all accrued penalties determined by the Court to be owing, together with interest as provided in Paragraph 62, to the United States and CARB, as applicable, within 60 Days of receiving the Court's decision or order, except as provided in Paragraph 58.c, below.
- c. If any Party appeals the District Court's decision and the United States/California prevail(s) in whole or in part, Defendants shall pay all accrued penalties determined by the federal appellate court to be owing, together with interest as provided in Paragraph 62, to the United States and CARB, as applicable, within 15 Days of receiving the final appellate court decision.

59. Obligations from Date of Lodging to the Effective Date. Upon the Effective Date, the stipulated penalty provisions of this Consent Decree shall be retroactively enforceable with regard to any and all violations of Appendix A, Paragraph 6 and Appendix B, Paragraphs 3, 4, and 5.b that have occurred from the Date of Lodging to the Effective Date, provided that stipulated penalties that may have accrued between the Date of Lodging and the Effective Date may not be collected unless and until this Consent Decree is entered by the Court.

60. Defendants shall pay stipulated penalties owing to the United States in the manner set forth and with the confirmation notices required by Paragraph 9, except that the transmittal letter shall state that the payment is for stipulated penalties and shall state for which violation(s) the penalties are being paid.

61. Defendants shall pay stipulated penalties owing to CARB by check, accompanied by a Payment Transmittal Form (which CARB will provide to the addressee listed in Paragraph 9 after the Effective Date), with each check mailed to:

California Air Resources Board
Accounting Office
P.O. Box 1436
Sacramento, CA 95812-1436;

or by wire transfer, in which case Defendants shall use the following wire transfer information and send the Payment Transmittal Form to the above address prior to each wire transfer:

State of California Air Resources Board
c/o Bank of America, Inter Branch to 0148
Routing No. 0260-0959-3 Account No. 01482-80005
Notice of Transfer: Accounting; Fax: (916) 322-9612
Reference: ARB Case # C00032.

Defendants are responsible for any bank charges incurred for processing wire transfers.

Stipulated penalties paid to CARB under this Consent Decree shall be deposited into the Air Pollution Control Fund for the purpose of enhancing CARB's mobile source emissions control

program through additional certification review, in-use evaluation, real-world testing, enforcement actions, and other CARB activities related to the control of air pollution.

62. If Defendants fail to pay stipulated penalties according to the terms of this Consent Decree, Defendants shall be liable for interest on such penalties, as provided for in 28 U.S.C. § 1961, accruing as of the date payment became due and continuing until payment has been made in full. Nothing in this Paragraph shall be construed to limit the United States or California from seeking any remedy otherwise provided by law for Defendants' failure to pay any stipulated penalties.

63. The payment of stipulated penalties and interest, if any, shall not alter in any way Defendants' obligation to complete the performance of the requirements of this Consent Decree, unless otherwise agreed to by the Parties in writing.

64. Non-Exclusivity of Remedy. Stipulated penalties are not the United States' or California's exclusive remedy for violations of this Consent Decree, including violations of this Consent Decree that are also violations of law. Subject to the provisions of Section XIV (Effect of Settlement/Reservation of Rights), the United States and California expressly reserve the right to seek any other relief they deem appropriate for Defendants' violation of this Consent Decree or applicable law, including but not limited to an action against Defendants for statutory penalties where applicable, additional injunctive relief, mitigation or offset measures and/or contempt. However, the amount of any statutory penalty assessed for a violation of this Consent Decree shall be reduced by an amount equal to the amount of any stipulated penalty assessed and paid pursuant to this Consent Decree (to the United States or to CARB, respectively).

XI. FORCE MAJEURE

65. “Force majeure,” for purposes of this Consent Decree, is defined as any event arising from causes beyond the control of Defendants, of any entity controlled by Defendants, or of Defendants’ contractors that delays or prevents the performance of any obligation under this Consent Decree despite Defendants’ best efforts to fulfill the obligation. The requirement that Defendants exercise “best efforts to fulfill the obligation” includes using best efforts to anticipate any potential force majeure event and best efforts to address the effects of any potential force majeure event (1) as it is occurring and (2) following the potential force majeure, such that the delay and any adverse effects of the delay are minimized. “Force majeure” does not include Defendants’ financial inability to perform any obligation under this Consent Decree.

Notwithstanding the foregoing, any failure by any supplier to deliver the Aftertreatment System hardware necessary for an Approved Emission Modification which delays or prevents the performance of any obligation under Section VI (Subject Vehicle Compliance), Appendix A, or Appendix B of this Consent Decree shall constitute “force majeure,” and any COVID-19 public health crisis event—even though COVID-19 is already under way—which delays or prevents an obligation under Section VI (Subject Vehicle Compliance), Section VII (Corporate Compliance), Section VIII (Mitigation) (except Paragraph 41), Appendix A, or Appendix B may constitute “force majeure,” provided in either instance that Defendants otherwise meet the requirements for force majeure under this Consent Decree.

66. If any event occurs or has occurred that may delay the performance of any obligation under this Consent Decree, for which Defendants intend or may intend to assert a claim of force majeure, whether or not caused by a force majeure event, Defendants shall provide notice by email and telephone to EPA/CARB, within seven Business Days of when

Defendants first knew that the event might cause a delay. Within 14 Days thereafter, Defendants shall provide in writing to EPA/CARB an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay or the effect of the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Defendants' rationale for attributing such delay to a force majeure event if it intends to assert such a claim; and a statement as to whether, in the opinion of Defendants, such event may cause or contribute to an endangerment to public health, welfare, or the environment. Defendants shall include with any notice all available documentation supporting the claim that the delay was attributable to a force majeure. Failure to comply with the requirements in this Paragraph shall preclude Defendants from asserting any claim of force majeure for that event for the period of time of such failure to comply, and for any additional delay caused by such failure. For purposes of this Paragraph, Defendants shall be deemed to know of any circumstance of which Defendants, any entity controlled by Defendants, or Defendants' contractors (excluding any supplier delivering Aftertreatment System hardware necessary for an Approved Emission Modification) knew or should have known.

67. If EPA/CARB agree that the delay or anticipated delay is attributable to a force majeure event, the time for performance of the obligations under this Consent Decree that are affected by the force majeure event will be extended by EPA/CARB, as applicable, for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the force majeure event shall not, of itself, extend the time for performance of any other obligation. EPA/CARB will notify Defendants in writing of the length of the extension, if any, for performance of the obligations affected by the force majeure event.

68. If EPA/CARB do(es) not agree that the delay or anticipated delay has been or will be caused by a force majeure event, EPA/CARB will notify Defendants in writing of its/their decision. If EPA/CARB do(es) not provide a response within 30 Days after receipt of Defendants' written force majeure notice, Defendants may treat the absence of a response as a denial of the written force majeure notice.

69. If Defendants elect to invoke the dispute resolution procedures set forth in Section XII (Dispute Resolution), they shall do so no later than 15 Days after receipt of EPA's/CARB's written notice or 15 Days after the 30 Day period referenced in the preceding Paragraph, as applicable. In any such proceeding, Defendants shall have the burden of demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or will be caused by a force majeure event, that the duration of the delay or the extension sought was or will be warranted under the circumstances, that best efforts were exercised to avoid and mitigate the effects of the delay, and that Defendants complied with the requirements of Paragraphs 65 and 66. If Defendants carry this burden, the delay at issue shall be deemed not to be a violation by Defendants of the affected obligation of this Consent Decree identified to EPA/CARB and the Court, as applicable.

XII. DISPUTE RESOLUTION

70. Unless otherwise expressly provided for in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising between the Parties under or with respect to this Consent Decree. Failure by the Defendants to seek resolution of a dispute under this Section shall preclude Defendants from raising any such issue as a defense to an action by the United States or California to enforce any obligation of Defendants arising under this Consent Decree.

71. Informal Dispute Resolution. Any dispute subject to dispute resolution under this Consent Decree shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when Defendants send the United States and CARB a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute, including, where applicable, whether the dispute arises from a decision made by EPA and CARB jointly, or EPA or CARB individually. The period of informal negotiations shall last for 30 Days after the date the Notice of Dispute is received by Plaintiffs, unless that period is modified by written agreement signed by all Parties. If the Parties cannot resolve a dispute by informal negotiations, then the position advanced by the United States/CARB shall be considered binding unless, within 30 Days after the conclusion of the informal negotiation period, Defendants invoke formal dispute resolution procedures as set forth below.

72. Formal Dispute Resolution. Defendants shall invoke formal dispute resolution procedures, within the time period provided in the preceding Paragraph, by serving on the United States/CARB a written Statement of Position regarding the matter in dispute. The Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting Defendants' position and any supporting documentation relied upon by Defendants.

73. The United States/CARB shall serve its/their Statement of Position within 45 Days of receipt of Defendants' Statement of Position. The United States'/CARB's Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting that position and any supporting documentation relied upon by the United States/CARB. The United States'/CARB's Statement of Position shall be binding on Defendants, unless Defendants file a motion for judicial review of the dispute in accordance with the following Paragraph.

74. Defendants may seek judicial review of the dispute by filing with the Court and serving on the United States/CARB, in accordance with Section XVI (Notices), a motion requesting judicial resolution of the dispute. The motion must be filed within 30 Days of receipt of the United States'/CARB's Statement of Position pursuant to the preceding Paragraph. The motion shall contain a written statement of Defendants' position on the matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly implementation of this Consent Decree. The motion may not raise any issue not raised in informal dispute resolution pursuant to Paragraph 71, unless the Plaintiffs raise a new issue of law or fact in the Statement of Position. If Defendants wish to raise in their motion seeking judicial resolution of the dispute new facts that became available after the completion of the informal dispute resolution process, Defendants shall re-initiate the dispute resolution process in accordance with Paragraph 71 and include the new facts in the Notice of Dispute.

75. The United States/California shall respond to Defendants' motion within the time period allowed by the Local Rules of this Court. Defendants may file a reply memorandum, to the extent permitted by the Local Rules.

76. Standard of Review

- a. Disputes Concerning Matters Accorded Record Review. Except as otherwise provided in this Consent Decree, in any dispute brought pursuant to Paragraph 74 that pertains to (1) the adequacy or appropriateness of plans or procedures to implement plans, schedules, or any other item that requires approval by EPA/CARB under this Consent Decree, (2) the adequacy of the performance of work undertaken pursuant

to this Consent Decree, and (3) all other disputes that are accorded review on the administrative record under applicable principles of administrative law, Defendants shall have the burden of demonstrating, based on the administrative record, that the position of EPA/CARB is arbitrary and capricious or otherwise not in accordance with law based on the administrative record. For purposes of this Paragraph, EPA/CARB will maintain an administrative record of the dispute, which will contain all statements of position, including supporting documentation, submitted pursuant to this Section. Prior to the filing of any motion, the Parties may submit additional materials to be part of the administrative record pursuant to applicable principles of administrative law.

- b. Other Disputes. Except as otherwise provided in this Consent Decree, in any other dispute brought under Paragraph 72, Defendants shall bear the burden of demonstrating by a preponderance of the evidence that their position complies with this Consent Decree.

77. In any disputes brought under this Section, it is hereby expressly acknowledged and agreed that this Consent Decree was jointly drafted in good faith by the United States, California, and Defendants. Accordingly, the Parties hereby agree that any and all rules of construction to the effect that ambiguity is construed against the drafting party shall be inapplicable in any dispute concerning the terms, meaning, or interpretation of this Consent Decree.

78. The invocation of dispute resolution procedures under this Section shall not, by itself, extend, postpone, or affect in any way any obligation of Defendants under this Consent

Decree, unless and until final resolution of the dispute so provides. Stipulated penalties with respect to the disputed matter shall continue to accrue from the first Day of noncompliance, but payment shall be stayed pending resolution of the dispute as provided in Paragraph 58. If Defendants do not prevail on the disputed issue, stipulated penalties shall be assessed and paid as provided in Section X (Stipulated Penalties).

XIII. INFORMATION COLLECTION AND RETENTION

79. The United States, CARB, and their representatives, including attorneys, contractors, and consultants (collectively, “Agency Representatives”), shall have the right of entry, upon presentation of credentials, at all reasonable times into any of Defendants’ offices, plants, or facilities:

- a. to monitor the progress of activities required under this Consent Decree;
- b. to verify any data or information submitted to the United States or CARB in accordance with the terms of this Consent Decree;
- c. to inspect records related to this Consent Decree;
- d. to conduct or observe testing related to this Consent Decree, whereupon a representative of Defendants shall be given the opportunity to accompany the Agency Representatives conducting such testing;
- e. to obtain documentary evidence, including photographs and similar data, related to this Consent Decree;
- f. to assess Defendants’ compliance with this Consent Decree; and
- g. for other purposes as set forth in 42 U.S.C. § 7542(b) and Cal. Gov’t Code § 11180 et seq.

80. Upon request, and for purposes of evaluating compliance with this Consent Decree, Defendants shall, as soon as is reasonably practicable, provide to EPA/CARB or the Agency Representatives at locations to be designated by EPA/CARB:

- a. a reasonable number of vehicles matching the configuration of the proposed Emission Modification in the applicable Emission Modification Proposal Report, pursuant to Appendix B, Paragraph 5.b hereto, for emissions testing;
- b. specified software, hardware, and related documentation for vehicles matching the configuration of the proposed Emission Modification in the applicable Emission Modification Proposal Report, pursuant to Appendix B, Paragraph 5.b hereto, including any tools needed for testing;
- c. reasonable requests for English translations of software or Defendants' documents; or
- d. other items or information that could be requested pursuant to 42 U.S.C. § 7542(a) or Cal. Gov't Code § 11180 et seq.

81. Until three years after the termination of this Consent Decree, Defendants shall retain, and shall instruct their contractors and agents to preserve, all Records in their or their contractors' or agents' possession or control, or that come into their or their contractors' or agents' possession or control, that relate to Defendants' performance of their obligations under this Consent Decree. The United States and CARB have an interest in these Records, which are necessary to their ability to oversee and assess Defendants' compliance with the terms of this Consent Decree resolving the United States' and CARB's allegations in their respective Complaints. Defendant Mercedes-Benz USA shall maintain within the United States a copy of

all Records required to be retained by Defendants pursuant to this Paragraph, except for Records that relate solely to Defendant Daimler AG's performance of its obligations under Section VII (Corporate Compliance) to the extent that such Records are retained by Daimler AG pursuant to this Paragraph. These information-retention requirements shall apply regardless of any contrary corporate or institutional policies or procedures. Nothing in this Paragraph shall apply to any documents in the possession, custody, or control of any outside legal counsel retained by Defendants in connection with this Consent Decree or of any contractors or agents retained by such outside legal counsel solely to assist in the legal representation of Defendants.

82. At any time during the three-year information-retention period of Paragraph 81, upon request by the United States or CARB, a Defendant receiving a request shall provide to the requesting Plaintiff copies of any Records required to be maintained under that Paragraph. Defendant Daimler AG alone may apply reasonable redactions to Personal Information contained in Records that relate to its performance of its obligations under this Consent Decree, provided that Daimler AG retains original copies of such Records. However, Defendant Daimler AG may not redact (1) the names of auditors who participated in any corporate audit conducted pursuant to the requirements of Section VII (Corporate Compliance); or (2) the name of the External Compliance Consultant retained pursuant to the requirements of Section VII (Corporate Compliance). Upon request by the United States or CARB, Defendant Daimler AG shall provide unredacted copies of such Records.

83. Defendants may assert that certain Records are privileged or protected as provided under federal or California law. If Defendants assert such a privilege or protection, they shall provide the following in writing: (1) the title of the Record; (2) the date of the Record; (3) the name and title of each author of the Record; (4) the name and title of each addressee and

recipient; (5) a description of the subject of the Record; and (6) the privilege or protection asserted by Defendants. However, Defendants may make no claim of privilege or protection regarding: (1) any data regarding the Subject Vehicles that Defendants are required to create or generate pursuant to this Consent Decree; or (2) the final version of a portion of any Record that Defendants are required to create or generate pursuant to this Consent Decree.

84. Confidential Business Information. Defendants may also assert that Records required to be provided under this Section or Section IX (Reporting Requirements) are protected as CBI under 40 C.F.R. Part 2 or 17 C.C.R. §§ 91000 et seq. As to any Record that Defendants seek to protect as CBI, Defendants and the United States and/or California, as applicable, shall follow the procedures set forth in 40 C.F.R. Part 2, and, for California, in 17 C.C.R. §§ 91000 et seq.

85. This Consent Decree in no way limits or affects any right of entry and inspection, or any right to obtain information, held by the United States or California pursuant to applicable federal or state laws, regulations, or permits, nor does it limit or affect any duty or obligation of Defendants to maintain Records imposed by applicable federal or state laws, regulations, or permits.

XIV. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS

86. Subject to the reservations of rights in this Section, this Consent Decree shall resolve and settle all of the United States' civil claims for civil penalties and injunctive relief against Defendants through the Date of Lodging for: (1) the violations alleged in the U.S. Complaint, (2) violations arising from or relating to the software, calibrations, and/or functions of the emission control system, combustion system, and transmission system for the Subject Vehicles, and (3) violations arising from or relating to Defendants' applications for a certificate

of conformity for the Subject Vehicles and any information provided to EPA for the purpose of securing such certificates. Payment of the civil penalty described in Paragraph 9 above also resolves the civil claims of CBP, as set forth in the separate settlement agreement between Defendants and CBP.

87. Subject to the reservations of rights in this Section, this Consent Decree shall resolve and settle all of California's civil claims for civil penalties and injunctive relief against Defendants through the Date of Lodging for: (1) the violations alleged in the California Complaint or any other allegations asserted by CARB before March 31, 2017, (2) violations arising from or relating to the software, calibrations, and/or functions of the emission control system, combustion system, and transmission system for the Subject Vehicles, and (3) violations arising from or relating to Defendants' applications for an executive order for the Subject Vehicles and any information provided to CARB for the purpose of securing such executive orders.

88. Neither this Consent Decree nor Defendants' consent to its entry constitutes an admission by Defendants of violations alleged by EPA or CARB in the Complaints or any other allegations asserted by CARB before March 31, 2017, related to the Subject Vehicles. Defendants reserve all defenses and all rights and remedies, legal and equitable, available to them in any action by a non-party pertaining to the Act, or any other federal, state, or local statute, rule, or regulation.

89. The United States and California reserve all legal and equitable remedies to enforce the provisions of this Consent Decree. The United States further reserves any claim(s) of any agency of the United States, other than EPA.

90. California further reserves, and this Consent Decree is without prejudice to any and all civil claims, rights, and remedies against Defendants with respect to:

- a. Further injunctive relief, including prohibitory and mandatory injunctive provisions intended to enjoin, prevent, and deter future misconduct, and/or incentivize its detection, disclosure, and/or prosecution; or to enjoin false advertising, violation of environmental laws, violation of consumer laws, the making of false statements, or the use or employment of any practice that constitutes unfair competition;
- b. Further injunctive relief pursuant to California Health and Safety Code as alleged in the California Complaint to mitigate the total lifetime excess emissions in California from the Subject Vehicles, which injunctive relief is fully set forth in and resolved by the California Partial Consent Decree, lodged concurrently with this Consent Decree;
- c. Any part of any claims for the violation of securities or false claims laws;
- d. Any criminal liability;
- e. Any and all other claim(s) of any officer or agency of the State of California, other than CARB;
- f. Any and all claims for relief to customers, including claims for restitution, refunds, rescission, damages, disgorgement;
- g. Any and all claims of the California Attorney General, except those claims released and/or resolved by the California Partial Consent Decree, lodged concurrently with this Consent Decree; and
- h. Any and all claims held by individual consumers.

91. This Consent Decree shall not be construed to limit the rights of the United States or California to obtain penalties or injunctive relief under the Act or implementing regulations, or under other federal or state laws, regulations, or permit conditions, except as specifically provided in Paragraphs 86–87. The United States and California further reserve all legal and equitable remedies to address any imminent and substantial endangerment to the public health or welfare or the environment arising at any of Defendants’ facilities, or posed by Defendants’ Subject Vehicles, whether related to the violations addressed in this Consent Decree or otherwise.

92. In any subsequent administrative or judicial proceeding initiated by the United States or California for injunctive relief, civil penalties, or other appropriate relief relating to Defendants’ violations, Defendants shall not assert, and may not maintain, any defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that the claims raised by the United States or California in the subsequent proceeding were or should have been brought in the instant case, except with respect to claims that have been specifically resolved pursuant to Paragraphs 86–87.

93. This Consent Decree is not a permit, or a modification of any permit, under any federal, state, or local laws or regulations. Defendants are responsible for achieving and maintaining complete compliance with all applicable federal, state, and local laws, regulations, and permits; and Defendants’ compliance with this Consent Decree shall be no defense to any action commenced pursuant to any such laws, regulations, or permits, except as set forth herein. The United States and California do not, by their consent to the entry of this Consent Decree, warrant or aver in any manner that Defendants’ compliance with any aspect of this Consent

Decree will result in compliance with provisions of the Act, or with any other provisions of federal, state, or local laws, regulations, or permits.

94. This Consent Decree does not limit or affect the rights of Defendants or of the United States or California against any third parties not party to this Consent Decree, nor does it limit or affect the rights of third parties not party to this Consent Decree against Defendants, except as otherwise provided by law.

95. This Consent Decree shall not be construed to create rights in, or grant any cause of action to, any third party not party to this Consent Decree.

XV. COSTS

96. The Parties shall bear their own costs of this action, including attorneys' fees, subject to Paragraph 90.e, except that the United States and California shall be entitled to collect the costs (including attorneys' fees) incurred in any action necessary to collect any portion of the civil penalty, mitigation, or stipulated penalties due under this Consent Decree but not paid by Defendants.

XVI. NOTICES

97. Unless otherwise specified in this Consent Decree, Materials shall be accompanied by a cover letter and submitted electronically as described below, unless such notices are unable to be uploaded to the CDX electronic system (in the case of EPA) or transmitted by email (in the case of any other party). For all notices to EPA, Defendants shall register for the CDX electronic system and upload such notices at https://cdx.epa.gov/epa_home.asp. All Emission Modification Proposal Reports, OBD Interim Reports, documents and data submitted pursuant to Paragraph 19 (Subject Vehicle In-Use Testing), and all revisions and amendments thereto, shall be submitted (1) on an electronic data

site hosted by Daimler AG that is accessible to the United States, EPA, CARB, and California at all times until 60 Days after Termination of this Consent Decree, and from which the United States, EPA, CARB, and California are able to download all data hosted on that site; and (2) on a hard disk that must be mailed to the addresses specified below no later than the date that the next set of semi-annual reports are due after the relevant data has been uploaded to the data site, and an email specifying the method of mailing and tracking information shall be sent to the addresses below. If there is any discrepancy between the information submitted to the electronic data site and the information submitted on the hard disk, the information submitted to the data site shall control. Any notice that cannot be uploaded to CDX or the Daimler-hosted electronic data site or transmitted via email or via a secure server shall be provided in writing via overnight mail (and if any attachment is voluminous, it shall be provided on a disk, hard drive, or other equivalent successor technology) to the addresses below:

As to the United States:	DOJ at the email, or if necessary, the mail addresses below and EPA (via CDX or the mail address below if CDX is not possible)
As to DOJ by email:	eescdcopy.enrd@usdoj.gov Re: DJ # 90-5-2-1-11788
As to DOJ by U.S. mail:	EES Case Management Unit Environment and Natural Resources Division U.S. Department of Justice P.O. Box 7611 Washington, D.C. 20044-7611 Re: DJ # 90-5-2-1-11788
As to DOJ by overnight mail:	4 Constitution Square 150 M Street, N. E. Suite 2.900 Washington, D.C. 20002 Re: DJ # 90-5-2-1-11788

As to EPA by email: ortega.kellie@epa.gov

As to EPA by mail: Director, Air Enforcement Division
1200 Pennsylvania Avenue NW
William J Clinton South Building
MC 2242A
Washington, D.C. 20460

Emission Modification Proposal Reports, OBD Interim Reports, documents and data submitted pursuant to Paragraph 19 (Subject Vehicle In-Use Testing), and all revisions and amendments thereto sent via hard drive shall be further labelled, "Attn: Gregory Orehowsky," and "Time Sensitive."

Emission Modification Proposal Reports, OBD Interim Reports, documents and data submitted pursuant to Paragraph 19 (Subject Vehicle In-Use Testing), and all revisions and amendments thereto shall also be sent to OTAQ via hard drive at the following address:

Director, Compliance Division
USEPA National Vehicle and Fuel Emissions Laboratory
2565 Plymouth Road
Ann Arbor, MI 48105

Submissions to OTAQ shall be labelled, "Attn: Paul Dekraker" and "Time Sensitive."

As to EPA by telephone: 202-564-0652

As to CBP by email: Marta.Williams@cbp.dhs.gov

As to California: CARB **and** CA AG at the email or mail addresses below, as applicable

As to CARB by email: DaimlerCD@arb.ca.gov

As to CARB by telephone: (916) 322-2884

As to CARB by mail: Chief Counsel
California Air Resources Board
Legal Office

1001 I Street
Sacramento, California 95814

As to CA AG by email:

gary.tavetian@doj.ca.gov
josh.caplan@doj.ca.gov
john.sasaki@doj.ca.gov

As to CA AG by mail:

Gary Tavetian
Supervising Deputy Attorney General
Natural Resources Law Section
California Department of Justice
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Los Angeles, CA 90013

Robert Byrne
Senior Assistant Attorney General
Natural Resources Section
Office of the Attorney General
P.O. Box 944255
Sacramento, CA 94244-2550

As to Defendants:

Gibson, Dunn & Crutcher, LLP, at the email or mail addresses below, as applicable

Daimler AG, at the email or mail addresses below, as applicable

MBUSA, LLC, at the email or mail addresses below, as applicable

As to one or more of the Defendants by email:

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As to one or more of the Defendants by mail:

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Washington, District of Columbia 20036
Telephone: (202) 955-8500

Facsimile: (202) 467-0539

Dirk Lindemann
Hendrik Heitsch
DAIMLER AG
Mercedesstraße 120
Building 120, Floor 8
(HPC 096 – F 387)
70327 Stuttgart

Matthew J. Everitt
Anthony D. Zepf
MERCEDES-BENZ USA, LLC
One Mercedes-Benz Drive
Sandy Springs, GA 30328-4312

98. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided in the immediately preceding Paragraph.

99. Materials submitted pursuant to this Section shall be deemed submitted upon uploading electronically, emailing, or mailing as required, except as provided elsewhere in this Consent Decree or by mutual agreement of the Parties in writing.

XVII. EFFECTIVE DATE

100. The Effective Date of this Consent Decree shall be the date upon which this Consent Decree is entered by the Court or a motion to enter this Consent Decree is granted, whichever occurs first, as recorded on the Court's docket; provided, however, that Defendant hereby agrees that it shall be bound to perform duties scheduled to occur between the Date of Lodging and the Effective Date, and shall perform those duties pursuant to this Consent Decree. In the event the United States withdraws or withholds consent to this Consent Decree before entry, or the Court declines to enter this Consent Decree, then the preceding requirement to perform duties scheduled to occur between the Date of Lodging and the Effective Date shall terminate.

XVIII. RETENTION OF JURISDICTION

101. The Court shall retain jurisdiction over this case until termination of this Consent Decree, for the purpose of resolving disputes arising under this Consent Decree or entering orders modifying this Consent Decree, pursuant to Sections XII (Dispute Resolution) and XIX (Modification), or effectuating or enforcing compliance with the terms of this Consent Decree.

XIX. MODIFICATION

102. Except as otherwise set forth in this Section or in Appendix A, Paragraph 14, the terms of this Consent Decree, including any attached Appendices, may be modified only by a subsequent written agreement signed by all the Parties. Where the modification constitutes a material change to this Consent Decree, it shall be effective only upon approval by the Court.

103. The United States or California, as applicable, will file any non-material modifications with the Court. Once the non-material modification has been filed, Defendants shall post the filed version (with ECF stamp) on the website required by Appendix A, Paragraph 16 (Online Access to Information). The following modifications will be considered non-material: (1) changes to the method of submission of Materials unless this Consent Decree originally mandated that a Material be made public and the proposed change involves changing that method of submission to make it non-public; (2) extensions of time not to exceed 90 Days at a time or 180 Days cumulatively; and (3) corrections of scrivener's errors.

104. Any disputes concerning modification of this Consent Decree shall be resolved pursuant to Section XII (Dispute Resolution), provided, however, that, instead of the burden of proof provided by Paragraph 76, the Party seeking the modification bears the burden of demonstrating that it is entitled to the requested modification in accordance with Federal Rule of Civil Procedure 60(b).

XX. TERMINATION

105. No earlier than five years after the Effective Date, after Defendants have completed the requirements of Section VI (Subject Vehicle Compliance) and Section VIII (Mitigation), and Appendices A and B, have demonstrated that they are in compliance with the requirements of Section VII (Corporate Compliance), have complied with all other requirements of this Consent Decree, and have paid the civil penalty and any accrued stipulated penalties as required by this Consent Decree, Defendants may serve upon the United States and California a request for termination, stating that Defendants have satisfied those requirements, together with all necessary supporting documentation. Defendants may serve such a request for termination notwithstanding the requirements of Appendix A, Paragraph 5 (Prohibition on Sales of Vehicles that Have Not Entered into Commerce); Appendix A, Paragraph 6 (Resale and Export of Subject Vehicles); Appendix A, Paragraph 7 (Emission Modification Available at No Cost); Appendix A, Paragraph 16 (Online Access to Information); and Appendix A, Paragraphs 18.a–e, 18.h, and 18.i (Extended Warranty for Modified Eligible Vehicles).

106. Following receipt by the United States and California of Defendants' request for termination, the Parties shall confer informally concerning the request and any disagreement that the Parties may have as to whether Defendants have satisfactorily complied with the requirements for termination of this Consent Decree. If the United States, after consultation with California, agrees that this Consent Decree may be terminated, the United States will file a motion to terminate this Consent Decree, provided, however, that the provisions associated with effectuating and enforcing Appendix A, Paragraph 5 (Prohibition on Sales of Vehicles that Have Not Entered into Commerce) and Appendix A, Paragraph 6 (Resale and Export of Subject Vehicles) shall continue in full force and effect for ten years from the Effective Date; and the

provisions associated with effectuating and enforcing Appendix A, Paragraph 7 (Emission Modification Available at No Cost), Appendix A, Paragraph 16 (Online Access to Information), and Appendix A, Paragraphs 18.a–e, 18.h, and 18.i (Extended Warranty for Modified Eligible Vehicles) shall continue in full force and effect until those provisions terminate by their own terms.

107. If the United States, after consultation with California, does not agree that this Consent Decree may be terminated, Defendants may invoke Dispute Resolution under Section XII. However, Defendants shall not seek Dispute Resolution of any dispute regarding termination until 45 Days after service of their request for termination.

XXI. PUBLIC PARTICIPATION

108. This Consent Decree shall be lodged with the Court for a period of not less than 30 Days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States reserves the right to withdraw or withhold its consent if the comments regarding this Consent Decree disclose facts or considerations indicating that this Consent Decree is inappropriate, improper, or inadequate. California reserves the right to withdraw or withhold its consent if the United States does so. Defendants consent to entry of this Consent Decree without further notice and agree not to withdraw from or oppose entry of this Consent Decree by the Court or to challenge any provision of this Consent Decree, unless the United States has notified Defendants in writing that it no longer supports entry of this Consent Decree.

XXII. SIGNATORIES/SERVICE

109. Each undersigned representative of Defendants and California and the Assistant Attorney General for the Environment and Natural Resources Division of the Department of

Justice certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Decree and to execute and legally bind the Party he or she represents to this document.

110. This Consent Decree may be signed in counterparts, and its validity shall not be challenged on that basis. For purposes of this Consent Decree, a signature page that is transmitted electronically (*e.g.*, by facsimile or emailed “PDF”) shall have the same effect as an original.

111. Defendants agree to accept service of process by mail with respect to all matters arising under or relating to this Consent Decree and to waive the formal service requirements set forth in Rules 4 and 5 of the Federal Rules of Civil Procedure and any applicable Local Rules of this Court including, but not limited to, service of a summons. Defendants need not file an answer to the complaint in this action unless or until the Court expressly declines to enter this Consent Decree, in which case Defendants’ answer would be due 30 Days following the Court’s order.

XXIII. INTEGRATION

112. This Consent Decree constitutes the final, complete, and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Consent Decree and supersedes all prior agreements and understandings, whether oral or written, concerning the settlement embodied herein. Other than deliverables that are subsequently submitted and approved pursuant to this Consent Decree, the Parties acknowledge that there are no representations, agreements, or understandings relating to the settlement other than those expressly contained in this Consent Decree.

XXIV. 26 U.S.C. § 162(f)(2)(A)(ii) IDENTIFICATION

113. For purposes of the identification requirement of Section 162(f)(2)(A)(ii) of the Internal Revenue Code, 26 U.S.C. § 162(f)(2)(A)(ii), the performance by Defendants of Section II (Applicability), Paragraph 5; Section V (Approval of Submissions; U.S./EPA/CARB Decision-Making), Paragraph 14; Section VI (Subject Vehicle Compliance), Paragraphs 18–19, and related Appendices A and B; Section VII (Corporate Compliance), Paragraphs 20–34, and related Appendix D; Section VIII (Mitigation), Paragraphs 35–40; Section IX (Reporting Requirements), Paragraphs 42–44 and 46–48; and Section XIII (Information Collection and Retention), Paragraphs 79–82, is restitution or required to come into compliance with law.

XXV. FINAL JUDGMENT

114. Upon approval and entry of this Consent Decree by the Court, this Consent Decree shall constitute a final judgment of the Court as to the United States, California, and Defendants.

XXVI. HEADINGS

115. Headings to the Sections and Subsections of this Consent Decree are provided for convenience and do not affect the meaning or interpretation of the provisions of this Consent Decree.

XXVII. APPENDICES

116. The following Appendices are attached to and part of this Consent Decree:

Appendix A is the Emission Modification Program;

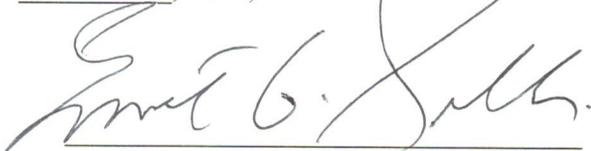
Appendix A, Attachment A is the Approved Label for Emission Modification Category 1;

Appendix A, Attachment B is the Approved Consumer Emission Modification Disclosures for Categories 1 and 9;

Appendix A, Attachment C is the Approved Dealer Emission Modification Disclosures for Emission Modification Categories 1 and 9;

Appendix B is Protocol for Assessment of Proposed Emission Modification (Test Protocol);
Appendix B, Attachment A is Emission Plus Test Vehicles and OBD Demonstration Vehicles;
Appendix B, Attachment B is Sample Signal Data;
Appendix B, Attachment C is Special Cycles;
Appendix B, Attachment D is PEMS Routes;
Appendix B, Attachment E is Data Parameters for Flat Files;
Appendix B, Attachment F is Emission, Special Cycle and Fuel Economy Testing Overview;
Appendix B, Attachment G is NVH Protocol;
Appendix B, Attachment H is Drivability Protocol;
Appendix B, Attachment I is Emission Modification Configuration Components (table);
Appendix C is ECU Signals for In-Use Vehicle Testing with Production ECU;
Appendix D is Defendants' Compliance Operating Plan; and
Appendix E is Information and Parameters Reported for Gasoline Vehicles Prior to Certification.

Dated and entered this 8th Day of MARCH, 2020, 2021



UNITED STATES DISTRICT JUDGE

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States v. Daimler AG & Mercedes-Benz USA, LLC*

FOR THE UNITED STATES OF AMERICA:

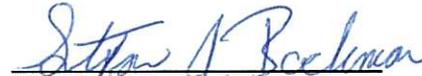
9/11/2020
Date



JEFFREY BOSSERT CLARK
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice



LORI JONAS
Assistant Section Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice



STEFAN J. BACHMAN
Trial Attorney
STEVEN O'ROURKE
Senior Attorney
JEROME MacLAUGHLIN
Senior Counsel
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
Washington, DC 20044-7611

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States v. Daimler AG & Mercedes-Benz USA, LLC*

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY:

9/10/2020
Date



SUSAN PARKER BODINE
Assistant Administrator
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
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Washington, DC 20460

ROSEMARIE A. KELLEY
Director, Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
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EVAN BELSER
Acting Director, Air Enforcement Division,
Office of Civil Enforcement
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BRIANNA IDDINGS
KELLIE ORTEGA
Air Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *California v. Daimler AG & Mercedes-Benz USA, LLC*

FOR THE PEOPLE OF THE STATE OF CALIFORNIA BY AND THROUGH THE CALIFORNIA AIR RESOURCES BOARD:

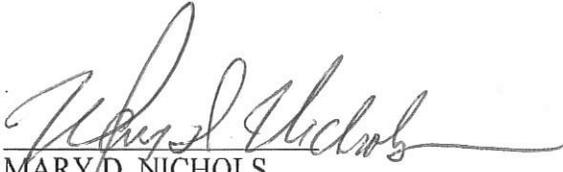


GARY E. TAVETIAN
Supervising Deputy Attorney General
JOSHUA M. CAPLAN
JOHN SASAKI
Deputy Attorneys General
California Department of Justice
Office of the Attorney General
600 West Broadway, Suite 1800
San Diego, CA 92101

THE UNDERSIGNED PARTY enters into the Consent Decree in the matter of *California v. Daimler AG & Mercedes-Benz USA, LLC*

FOR THE CALIFORNIA AIR RESOURCES BOARD:

9/9/2020
Date



MARY D. NICHOLS
Chair
California Air Resources Board
1001 I Street
Sacramento CA 95814



RICHARD W. COREY
Executive Officer
California Air Resources Board
1001 I Street
Sacramento CA 95814



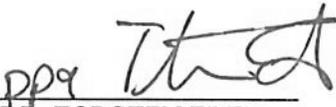
ELLEN M. PETER
Chief Counsel
D. ARON LIVINGSTON
Assistant Chief Counsel
ALEXANDRA KAMEL
Senior Attorney
Legal Office
California Air Resources Board
1001 I Street
Sacramento CA 95814

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States v. Daimler AG & Mercedes-Benz USA, LLC* and in the matter of *California v. Daimler AG & Mercedes-Benz USA, LLC*

FOR DAIMLER AG:

13.8.2020
Date


DR. JÜRGEN GLEICHAUF
Vice President Legal Product
DAIMLER AG
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Building 120, Floor 8
(HPC 096 – F 387)
70327 Stuttgart


DR. TORSTEN EDER
Vice President Mercedes-Benz Powertrain
DAIMLER AG
Mercedesstraße 137
Building 128, Floor 9
(HPC 019 – C 750)
70327 Stuttgart

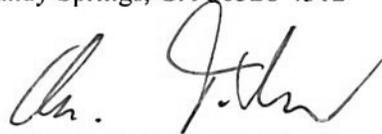
THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of *United States v. Daimler AG & Mercedes-Benz USA, LLC* and in the matter of *California v. Daimler AG & Mercedes-Benz USA, LLC*

FOR MERCEDES-BENZ USA,
LLC:

13 Aug 2020
Date



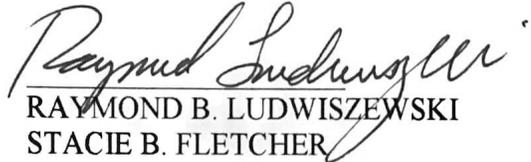
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Vice President Customer Service
MERCEDES-BENZ USA, LLC
One Mercedes-Benz Drive
Sandy Springs, GA 30328-4312

COUNSEL FOR DAIMLER AG
AND MERCEDES-BENZ USA,
LLC

8/14/20
Date


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APPENDIX A

EMISSION MODIFICATION PROGRAM

A. GENERAL

1. Requirement to Establish a Vehicle Emission Modification Program. Defendants shall establish a vehicle Emission Modification program, with a toll-free call center and online support, whereby each Eligible Owner or Eligible Lessee may learn about the Approved Emission Modification for his or her Eligible Vehicle and schedule an appointment at a Dealer to have that Eligible Vehicle modified (the “Emission Modification Program”) no later than 15 Days after the approval of the necessary Submissions for each Emission Modification Category or the Effective Date of this Consent Decree, whichever is later. Online support for the Emission Modification Program shall be maintained by Defendants in accordance with Paragraph 16 of this Appendix A. Call center support for the Emission Modification Program shall be maintained by Defendants through the date on which the Emission Modification Program Rates (“EMP Rates”) specified in Paragraph 4 of this Appendix A are achieved or two years from approval of the last Approved Emission Modification, whichever is later.
2. Emission Modification Configuration. The Approved Emission Modification for each Emission Modification Category shall be established pursuant to the process outlined in Appendix B.
3. Modification of Eligible Vehicles with Approved Emission Modification. Defendants shall ensure that each Eligible Vehicle that participates in the Emission Modification Program receives from a Dealer the Approved Emission Modification for that Eligible Vehicle in accordance with the schedules and procedures set forth in this Appendix A.
 - a. Upon the Effective Date, Defendants are authorized to offer the Approved Emission Modification to Eligible Owners and Eligible Lessees and to modify the Eligible Vehicles in Emission Modification Categories 1, 2, 9, 10, and 11 with the Approved Emission Modification.
 - b. For all other Emission Modification Categories, Defendants are authorized to offer the Approved Emission Modification to Eligible Owners and Eligible Lessees and to modify the Eligible Vehicles with the Approved Emission Modification upon approval in accordance with Appendix B, Paragraph 5.
4. Emission Modification Program Rate. Defendants shall install the Approved Emission Modification on 85% of the Sprinters nationwide (the “National Sprinter EMP Rate”) and 85% of the Sprinters in California (the “California Sprinter EMP Rate”), and 85% of the Passenger Vehicles nationwide (the “National Passenger Vehicle EMP Rate”) and 85% of the Passenger Vehicles in California (the “California Passenger Vehicle EMP Rate”), that are registered with a state Department of Motor Vehicles or equivalent agency or held by a Dealer or unaffiliated dealer and located in the United States or its territories as of March 13, 2020. For purposes of this Paragraph, as of March 13, 2020, the number of

Sprinters nationwide is 147,838, the number of Sprinters in California is 24,036, the number of Passenger Vehicles nationwide is 62,759, and the number of Passenger Vehicles in California is 12,910. Defendants shall meet the National Sprinter EMP Rate and the California Sprinter EMP Rate by the later of: three years from the Effective Date, or three years from approval of Emission Modification Category 3 in accordance with Appendix B, Paragraph 5. Defendants shall meet the National Passenger EMP Rate and the California Passenger EMP Rate by the later of: two years from the Effective Date, or two years from approval of the last-submitted Emission Modification Category in accordance with Appendix B, Paragraph 5. Defendants shall receive credit toward the relevant 85% for every Approved Emission Modification of an Eligible Vehicle that Defendants execute by the relevant date, for every Eligible Vehicle that is permanently removed from commerce by the relevant date, and for every Subject Vehicle that Defendants purchase by the relevant date (including vehicles purchased prior to the Date of Lodging), provided that no Eligible Vehicle may be counted more than once, and Subject Vehicles that have not entered commerce prior to the Effective Date of the Consent Decree may not be counted.

5. Prohibition on Sales of Vehicles that Have Not Entered into Commerce. To the extent that any Subject Vehicle has not been introduced into commerce by the Effective Date of the Consent Decree, and remains the property of one or more Defendants, Defendants shall not cause such vehicles to be sold, leased, imported, or otherwise introduced into commerce, unless and until Defendants have installed the appropriate Approved Emission Modification on such vehicle. No Subject Vehicle that receives the Approved Emission Modification under this Paragraph shall count toward meeting the National Emission Modification Program Rate or the California Emission Modification Program Rate. No MY16 Six-Cylinder GLE 350d shall be reintroduced into commerce.
6. Resale and Export of Subject Vehicles. After the date of approval of the applicable Emission Modification in accordance with Appendix B, Attachment I, or the Date of Lodging of this Consent Decree, whichever is later, Defendants shall not sell, lease, introduce into commerce, or cause or arrange for any Dealer or other entity to do the foregoing, and shall instruct Dealers not to sell or cause to be sold, or lease or cause to be leased, or introduce into commerce, any Subject Vehicle, unless it has received the Approved Emission Modification. After the Date of Lodging of this Consent Decree, Defendants shall not export, and shall instruct its Dealers not to export, from the United States to another country, any Subject Vehicle, unless it has received the Approved Emission Modification. Defendants shall not sell or cause to be sold, or lease or cause to be leased, or export or cause to be exported from the United States to another country any MY16 Six Cylinder GLE 350d. Notwithstanding this Paragraph, Defendants may export a reasonable number of Test Vehicles to Germany for purpose of testing in accordance with the procedures outlined in Appendix B.
7. Emission Modification Available at No Cost. Defendants shall make the Approved Emission Modification available to all Eligible Owners and Eligible Lessees, at no cost, for 15 years after the Model Year of the Subject Vehicle or 8 years after the approval of the applicable Approved Emission Modification in accordance with Appendix B,

Paragraph 5, whichever is later. As long as the parts necessary for the Approved Emission Modification are available after these time periods, Defendants shall continue to make the Approved Emission Modification available to Eligible Owners and Eligible Lessees. Defendants shall not require any consumer payment or release of any Eligible Owner's or Lessee's right in exchange for performing the Approved Emission Modification.

- a. Although Defendants are not required to provide any consumer restitution or damages payment in connection with the Approved Emission Modification, Defendants shall offer an Approved Emission Modification to any Eligible Owner or Eligible Lessee regardless of whether the consumer is eligible for or receives such consumer restitution or damages.
 - b. The requirements contained in this Paragraph shall continue in full force and effect after Termination of the Consent Decree. Defendants may move for Termination of the Consent Decree pursuant to the requirements of Section XX (Termination) even though the obligations of this Paragraph shall remain in place.
8. Grounds for Refusal to Apply the Modification to an Eligible Vehicle. If an Eligible Vehicle has been altered with the use of any after-market emissions-related components, parts, and/or software or the removal of any original emissions-related components, parts, and/or software, and such alteration(s) are likely to substantially affect the operation of the vehicle with the Approved Emission Modification or substantially impede installation of the Approved Emission Modification, Defendants shall not be required to install the Approved Emission Modification on the Eligible Vehicle until the owner of such vehicle, at his or her expense, has reversed the alteration(s) such that the Approved Emission Modification may be installed and not be substantially affected.
 9. Scheduling. Defendants shall use commercially reasonable efforts to install the Approved Emission Modification in a given Eligible Vehicle within 15 Days of the date on which an Eligible Owner or Eligible Lessee requests and schedules the modification. During the period specified in Paragraph 7 herein, Defendants shall take reasonable steps to ensure that no Eligible Owner or Eligible Lessee is required to wait more than 75 Days for a scheduled appointment to receive the Approved Emission Modification after requesting an appointment.
 10. Loaner Vehicles. Where they are available, Defendants shall request that Dealers offer "loaner" vehicles to each Eligible Owner and Eligible Lessee at no cost where the implementation of the Approved Emission Modification will take three hours or longer to complete. Where such "loaner" vehicles are available at a Dealer, Defendants shall request that the "loaner" vehicle shall be offered to each Eligible Owner or Eligible Lessee for the entire period of time it takes for the Approved Emission Modification to be completed.
 11. No Release of Private Party Claims Required. Defendants may not require any release of liability for any legal claims or arbitration of any claim that an Eligible Owner or Eligible

Lessee may have against Defendants or any other person in exchange for receiving the Approved Emission Modification or Extended Modification Warranty.

12. No Prohibition on Other Incentives. Nothing in this Decree is intended to prohibit Defendants from offering an Eligible Owner or Eligible Lessee any further incentives or trade-in options in addition to those required in this Appendix A; however, Defendants may not offer Eligible Owners or Eligible Lessees any incentive not to participate in the Emission Modification Program, including by causing the Eligible Vehicle not to receive the Approved Emission Modification.
13. Labeling Requirements. Defendants shall ensure that Eligible Vehicles that receive the Approved Emission Modification shall be permanently affixed with labels that: (1) do not cover any previously affixed labels; (2) clearly specify the applicable emissions standard of the modified Eligible Vehicle and otherwise conform to the requirements of the label required under 40 C.F.R. Part 85, Subpart S; (3) inform potential vehicle purchasers and potential lessees that the vehicle has received the Approved Emission Modification; (4) identify any emission control components installed or modified in accordance with the Approved Emission Modification; (5) identify the Emission Modification Program number; (6) list a code designating the Dealer at which the Approved Emission Modification was performed; and (7) follow the format of the approved label for Emission Modification Category 1, attached to this Consent Decree as Attachment A of this Appendix A, and contain similar material information.
14. Approved Emission Modification and Vehicle Modifications.
 - a. Modifications Related to the Approved Emission Modification.
 - i. After the Effective Date, if, due to an unforeseen technical issue, Defendants determine that either they cannot install the Approved Emission Modification on certain Eligible Vehicles for reasons other than those described in Paragraph 8 of this Appendix A (Grounds for Refusal to Apply Modifications to an Eligible Vehicle), or the Approved Emission Modification must be modified in any way, Defendants shall, within 60 Days of learning of such event, provide to EPA/CARB for review and approval a proposal (including a schedule) for either modifying the Eligible Vehicles to accept the Approved Emission Modification or modifying the Approved Emission Modification to be able to install it on the Eligible Vehicles. The proposal shall (1) describe the conditions or circumstances that prevent installation of the Approved Emission Modification on the Eligible Vehicles or that require modification of the Approved Emission Modification, (2) estimate the number of Eligible Vehicles likely affected by such conditions or circumstances, (3) describe any and all modifications necessary and the estimated timeline for such modifications, (4) describe all changes, if any, to the information described in the Updated AECD Document and/or OBD Summary Table, and (5) provide the certification specified in Paragraph 48 of the Consent

Decree. For OBD-related modifications, Daimler shall also provide the information required in 13 C.C.R. § 1968.5(d).

- ii. At the request of EPA/CARB, Defendants shall collect and provide test data or other information that EPA/CARB reasonably require to evaluate the proposal.
 - iii. In reviewing the proposal, EPA/CARB will consider whether the proposed modification states a proper determination that Defendants cannot install the Approved Emission Modification on certain Eligible Vehicles for reasons other than those described in Paragraph 8 of this Appendix A, or that the Approved Emission Modification must be modified, and complies with the requirements of Appendix B, Paragraph 5.a.i(1)–(4). EPA and CARB will follow their respective regulatory procedures, and may use any screening tests that they deem appropriate to determine whether the proposal complies with the requirements of Appendix B, Paragraph 5.a.i(1)–(4).
 - iv. Upon receipt of written approval of the proposal by EPA/CARB, Defendants may implement the proposal as specified in the approval. Defendants may make the modifications addressed in this Paragraph concurrently with implementing the Approved Emission Modification.
 - v. If EPA/CARB determine the proposal fails to satisfy the criteria in Appendix B, Paragraph 5.a.i(1)–(4), then they will notify Defendants in writing, identifying the basis/bases for the disapproval. If EPA/CARB fail to make a determination within 60 Days of receipt of the proposal, Defendants may, at their discretion, consider the plan to be denied for the purpose of invoking Dispute Resolution pursuant to Section XII (Dispute Resolution) of this Consent Decree. EPA and CARB reserve the right to reject Defendants’ determination that Defendants cannot install the Approved Emission Modification on certain Eligible Vehicles for reasons other than those described in Paragraph 8 of this Appendix A (Grounds for Refusal to Apply Modifications to an Eligible Vehicle), or that the Approved Emission Modification must be modified.
- b. Modifications to the EGR System, SCR System, DOC System, DPF System, Thermal Management Strategies, or the OBD System that are Unrelated to the AEM.
- i. After the Effective Date, Defendants are enjoined from undertaking a recall pursuant to 40 C.F.R. Part 85, Subpart S, 40 C.F.R. § 85.1904, and/or 13 C.C.R. §§ 2111–2135; a field fix pursuant to 40 C.F.R. § 86.1842-01(b) and/or 13 C.C.R. §§ 1961(d) & 1961.2(d) and/or CARB Manufacturer’s Advisory Correspondence #79-002, “Field Fixes Involving Emission-Related Components,” (Jan. 31, 1979); or any other

systematic campaign to modify the EGR System, SCR System, Thermal Management Strategies, DOC System, DPF System, or the OBD System of the Subject Vehicles, other than in accordance with the procedures set forth in Paragraph 14, and for the installation of the Approved Emission Modification. Prior to undertaking any such modification unrelated to the Approved Emission Modification for the aforementioned systems, Defendants shall, as applicable, (1) comply with 40 C.F.R. Part 85, Subpart S, 40 C.F.R. § 85.1904, and/or CARB regulations, including 13 C.C.R. §§ 2111–2135, and, if applicable under the regulations, submit a recall report, or (2) comply with 40 C.F.R. § 86.1842-01(b) and/or 13 C.C.R. §§ 1961(d) & 1961.2(d) and/or CARB Manufacturer’s Advisory Correspondence #79-002, “Field Fixes Involving Emission-Related Components,” (Jan. 31, 1979); or (3) for OBD, comply with 13 C.C.R. § 1968.5(d). With each report, Defendants shall submit the certification specified in Paragraph 48 of the Consent Decree, and an explanation as to why the modification is unrelated to the AEM and does not require a proposal pursuant to Paragraph 14.a (“Modifications Related to the Approved Emission Modification”).

- ii. At the request of EPA/CARB, Defendants shall provide test data or other information that EPA/CARB reasonably require to evaluate the modification described in the recall or field fix report.
- iii. In reviewing the recall or field fix report, except where modified by this Paragraph 14.b, EPA/CARB shall follow their respective regulatory procedures, and may use any screening tests that they deem appropriate in determining whether to implement a recall or take other appropriate actions with respect to all Subject Vehicles identified in the recall report. Any such administrative action shall not be subject to review under Section XII (Dispute Resolution) of the Consent Decree.
- iv. Unless EPA/CARB disapprove the proposal, Defendants may begin implementation as early as the 31st Day after submission of the recall or field fix report. Defendants may make the modifications addressed in this Paragraph concurrently with implementing the Approved Emission Modification.
- v. EPA and CARB may take any action authorized under their respective regulations or under the Clean Air Act and comparable California law in the event that EPA/CARB should subsequently determine that the modification described in the recall or field fix report is non-compliant with regulatory requirements, including, but not limited to, the right to cause the nonconformity to be remedied at no expense to the owner, and other relief.

- c. Modifications Reported to NHTSA.
- i. Notwithstanding Paragraphs 14.a and 14.b, Defendants may implement any modification that has been reported to and approved by NHTSA either as a safety recall action or a voluntary campaign in accordance with 49 C.F.R. § 573 (“Part 573 Report”).
 - ii. On the Day of submission to NHTSA of any Part 573 Report relevant to a Subject Vehicle, Defendants shall send written notification to EPA/CARB, in accordance with Paragraph 97 of the Consent Decree, that they intend to implement a NHTSA modification, and attach a copy of the Part 573 Report to the notification.
 - iii. No later than 30 Days after the submittal of the Part 573 Report to EPA/CARB, Defendants shall submit the proposal or recall report, in accordance with Paragraph 14.a.i or Paragraph 14.b.i, to EPA/CARB.
 - iv. If EPA/CARB notify Defendants that the NHTSA modification is non-compliant with regulatory requirements relating to environmental laws, Defendants shall, within 60 Days of such notification, either (1) submit to EPA/CARB for review and approval a proposal (including a schedule) for addressing the non-compliances identified by EPA/CARB, (2) challenge EPA’s/CARB’s determination in accordance with Section XII (Dispute Resolution) of this Consent Decree, or (3) if Defendants believe that the non-compliances cannot be addressed without jeopardizing compliance with NHTSA requirements, Defendants shall set forth all the bases for this belief and submit a proposal that provides for “no further action” to be taken to remedy the non-compliances identified by EPA/CARB. Upon receipt of written approval by EPA/CARB, Defendants shall either implement the proposal as specified or take no further action as specified. If EPA/CARB fail to make a determination within 60 Days of receipt of the proposal, Defendants may, at their discretion, consider the proposal to be denied for the purposes of invoking Dispute Resolution pursuant to Section XII (Dispute Resolution) of this Consent Decree.
 - v. Defendants may make the modifications addressed in this Paragraph concurrently with implementing the Approved Emission Modification.
- d. Modifications that Are Not Subject to Procedures Under this Consent Decree. If a modification is not subject to the requirements of this Consent Decree, Defendants may make the modification, concurrently with implementing the Approved Emission Modification or otherwise, provided Defendants comply with all regulatory requirements under the Clean Air Act and comparable California law that apply to such modifications.

- e. Except as otherwise provided herein, the process for submission, review, approval, and resubmission of a proposal under this Paragraph 14 shall follow the procedure described in Section V (Approval Of Submissions; U.S./California Decision-Making) of this Consent Decree.
- f. Modification Notices / Disclosures. No later than 15 Business Days after written approval in accordance with Paragraph 14.a.iv or 14.c.iv, Defendants shall notify, by first-class, postage paid U.S. mail, all affected Eligible Owners and Eligible Lessees that the Approved Emission Modification for their vehicles has been modified. Defendants shall also display on the website required under Paragraph 16 of this Appendix A updated Consumer Emission Modification Disclosures as described in Paragraph 15 of this Appendix A, and shall also provide updated Dealer Emission Modification Disclosures as described in Paragraph 17 of this Appendix A, to the extent that updates are required by Paragraphs 15 and 17. Defendants shall provide any required notices and disclosures relevant to Paragraph 14.b in accordance with the regulatory provisions cited in Paragraph 14.b.i and any other applicable regulatory provisions.

B. DISCLOSURES

- 15. Consumer Emission Modification Disclosure. Defendants shall notify Eligible Owners and Eligible Lessees of Eligible Vehicles of the Emission Modification Program pursuant to this Paragraph.
 - a. Defendants shall provide by first-class, postage paid U.S. mail to all affected Eligible Owners and Eligible Lessees known to Defendants, no later than 15 Business Days after the later of the Effective Date of this Consent Decree, or approval in accordance with Appendix B, Paragraph 5, notice of the availability of the Approved Emission Modification. The notice (the “Consumer Emission Modification Disclosure”) shall include the following information, described in plain language: (1) a summary of the Approved Emission Modification generally; (2) a reference to the label described in Paragraph 13 of this Appendix A, and a statement regarding the applicable emission standard following the Approved Emission Modification; (3) a list of any hardware exchanged as specified in Appendix B, Attachment I; (4) a general description of any changes, or lack thereof, in fuel economy, Noise Vibration and Harshness, and Drivability resulting from the Approved Emission Modification; (5) a general description of any changes, or lack thereof, in frequency of oil changes and DEF refill, resulting from the Approved Emission Modification; (6) a summary of how Eligible Owners and Eligible Lessees can obtain the Approved Emission Modification; (7) any OBD System limitations that make identification and repair of any components difficult, compromise warranty coverage, or may reduce the effectiveness of inspection and maintenance program vehicle inspections; (8) the applicable Extended Modification Warranty; and (9) any other disclosures required by law.

- b. The notice shall follow the format of the approved Consumer Emission Modification Disclosure for Emission Modification Categories 1 and 9, attached to this Consent Decree as Attachment B of this Appendix A, and shall contain, at a minimum, all the information listed therein, as applicable to each Emission Modification Category.
 - c. Nothing in this Consent Decree shall prohibit Defendants from issuing subsequent notices or taking additional measures to inform Eligible Owners or Eligible Lessees of the Emission Modification Program, provided, however, that Defendants may not provide any notice or additional information that is inconsistent with or contradictory to the notices required by this Paragraph 15. Defendants shall provide a copy of any subsequent consumer notices as part of Defendants' semi-annual reports required by Paragraph 42 of the Consent Decree.
16. Online Access to Information.
- a. The Consumer Emission Modification Disclosure for each Emission Modification Category shall be made available online on a public website accessible from the Defendants' primary U.S. website by Defendants within five Business Days of the approval of the applicable Approved Emission Modification in accordance with Appendix B, Paragraph 5, or no later than 15 Days after the Effective Date of this Consent Decree, whichever is later.
 - b. The website shall display the Consumer Emission Modification Disclosure in a manner such that members of the public and consumers can readily access the information.
 - c. Information relevant to a specific Subject Vehicle, such as coverage of the applicable Extended Modification Warranty, and whether the Approved Emission Modification is available for, and/or has been applied to, a specific Subject Vehicle shall be available on the website when searching by VIN.
 - d. Information relevant to a specific part covered by the applicable Extended Modification Warranty for the Subject Vehicle, including whether a specific part is covered by the Extended Modification Warranty, shall be available when searching on the website by VIN.
 - e. The website described in this Paragraph shall be accessible free of charge to owners, lessees and prospective purchasers and shall be maintained by Defendants for a minimum of 10 years after the Consent Decree is entered. The requirements contained in this Paragraph shall continue in full force and effect after Termination of the Consent Decree. Defendants may move for Termination of the Consent Decree pursuant to the requirements of Section XX (Termination) even though the obligations of this Paragraph shall remain in place.
17. Dealer Disclosures. Defendants shall notify Dealers of Subject Vehicles of the Emission Modification Program pursuant to this Paragraph.

- a. No later than 15 Business Days after the later of the Effective Date, or approval of the applicable Approved Emission Modification for each Emission Modification Category in accordance with Appendix B, Attachment I, Defendants shall provide to Dealers a notice describing Dealers' obligations under the Emission Modification Program. The notice ("Dealer Emission Modification Disclosure") shall include (1) the information contained in the Consumer Emission Modification Disclosure, (2) repair instructions that describe the steps necessary to implement the Approved Emission Modification, (3) the "no-cost" information detailed in Paragraph 7 of this Appendix A, and (4) any other disclosures required by law.
- b. The notice shall follow the format of the approved notice for Emission Modification Categories 1 and 9, attached to this Consent Decree as Attachment C of this Appendix A, and shall contain similar material disclosures.
- c. Nothing in this Consent Decree shall prevent Defendants from issuing subsequent notices or taking additional measures, provided, however, that Defendants may not provide any notice or additional information regarding the Emission Modification Program that is inconsistent with or contradictory to the notices required by this Paragraph. Defendants shall provide a copy of any subsequent Dealer notices as part of Defendants' semi-annual reports required by Paragraph 42 of the Consent Decree.

C. WARRANTY

18. Extended Warranty for Modified Eligible Vehicles. Defendants shall provide an extended warranty (the "Extended Modification Warranty") for each Eligible Vehicle receiving an Approved Emission Modification. Subject to standard limitations that must be identified to Eligible Owners and Eligible Lessees, which may set forth exclusions like accident, abuse, neglect, or installation of unexempted parts (as that term is described in 13 C.C.R. § 2038(h)), and applicable existing warranty provisions that will remain in effect, the Extended Modification Warranty shall cover the costs of all parts and labor needed to repair the items listed below, as well as the cost or provision of a loaner vehicle for warranty service lasting longer than three hours where such a loaner vehicle is available. Defendants shall not impose on consumers any fees or charges, and shall pay any fees or charges imposed by Dealers related to the warranty service. Unless otherwise specified, the part shall be covered for all Eligible Vehicles that receive the Approved Emission Modification.
 - a. The Extended Modification Warranty shall cover the following parts:
 - i. DOC,
 - ii. DPF,
 - iii. SCR catalyst,

- iv. DEF injector,
- v. DEF injector controller,
- vi. DEF supply module,
- vii. DEF pump,
- viii. Temperature sensor unit,
- ix. Exhaust temperature sensor,
- x. PM sensor,
- xi. Lambda sensor for Emission Modification Categories 1–5,
- xii. NOx sensors,
- xiii. Fuel injectors,
- xiv. Air intake throttle,
- xv. EGR valve,
- xvi. EGR duct,
- xvii. EGR cooler (including bypass-control),
- xviii. Intake manifold/charge air distributor,
- xix. EGR temperature sensor,
- xx. Turbocharger, including VGT actuator,
- xxi. ECU hardware, where replaced as part of the Approved Emission Modification,
- xxii. TCU hardware, where replaced as part of the Approved Emission Modification,
- xxiii. HCU hardware, where replaced as part of the Approved Emission Modification,
- xxiv. OBD System: the cost of any OBD Diagnostic Scan for malfunctions that trigger the MIL, regardless of whether the malfunction is attributable to a part that is covered under the Extended Modification Warranty, as well as the cost of troubleshooting to determine the reason for the malfunction, but only if the malfunction is determined to be attributable to a part that is covered under the Extended Modification Warranty,

- xxv. Cylinder head assembly components: camshaft, valves, springs, valve spring keepers, valve seats, cam bearing caps, and manifold studs,
 - xxvi. Engine timing chain,
 - xxvii. Intake manifold pressure sensor,
 - xxviii. Instrument cluster hardware, where replaced as part of the Approved Emission Modification, and
 - xxix. Coolant thermostat, where replaced as part of the Approved Emission Modification.
- b. Extended Warranty Period. The warranty period for the Extended Modification Warranty shall be the greater of: (1) 10 years from date of initial sale or 120,000 miles on the odometer, whichever comes first; or (2) 4 years or 48,000 miles from the date of installation of the Approved Emission Modification, whichever comes first. The Extended Modification Warranty Period shall continue after Termination of the Consent Decree, as provided in this Paragraph.
- c. Modification of the Extended Warranty. In addition to the coverage provided in Paragraphs 18.a and 18.b, Defendants shall expand the Extended Modification Warranty to include additional parts that are exchanged as part of the Emission Modification pursuant to Paragraph 14.a beyond those parts listed in Appendix B, Attachment I.
- d. Additional Extended Warranty Periods for Specific OBD Noncompliances.
- i. Defendants shall extend the warranty periods in Paragraph 18.b for the parts listed in Paragraph 18.a applicable to that OBD Cluster as follows:
 - A. Class 2 Additional OBD-Noncompliances: By 6 months and 6,000 miles for each Class 2 Additional OBD Noncompliance determined by EPA and CARB,
 - B. Unreported OBD Noncompliances: By 6 months and 6,000 miles for each Unreported OBD Noncompliance determined by EPA and CARB,
 - C. 1968.5 OBD Noncompliances: By 12 months and 12,000 miles for each 13 C.C.R. § 1968.5 OBD Noncompliance determined by EPA and CARB.
 - ii. If Defendants believe a part or parts covered by the Extended Modification Warranty is not affected by a Class 2 Additional OBD-Noncompliance, Unreported OBD Noncompliance, or 13 C.C.R. § 1968.5 Noncompliance, as relevant, Defendants may submit a written engineering

justification for their position, including all applicable data, to EPA/CARB, with Defendants bearing the burden of proof by a preponderance of the evidence for supporting such an engineering justification, by the following:

- A. Class 2 Additional OBD-Noncompliances: No later than 30 Days after EPA/CARB issue the approval of the Emission Modification Proposal Report under Appendix B, Paragraphs 5.a.1.A, 5.a.i.B, or 5.a.i.C,
 - B. Unreported OBD Noncompliances: No later than 30 Days after the United States transmits to Defendants a demand for stipulated penalties under Paragraph 53.c.iii of the Consent Decree,
 - C. 13 C.C.R. § 1968.5 OBD Noncompliances: No later than 30 Days after the United States transmits to Defendants a demand for stipulated penalties under Paragraph 53.c.iv of the Consent Decree.
- iii. Within 30 Days of the Day EPA and CARB are each in receipt of Defendants' engineering justification and data submitted under Paragraph 18.d.ii, EPA/CARB shall, in their unreviewable discretion and based upon their review of the engineering justification and data submitted under Paragraph 18.d.ii, notify Defendants in writing that: (1) the part or parts in Appendix A, Paragraph 18.a as to which Defendants submitted a justification and data are affected by a Class 2 Additional OBD Noncompliance, Unreported OBD Noncompliance, or 13 C.C.R. § 1968.5 Noncompliance, as relevant, and therefore Defendants shall extend the warranty period for those parts as specified in Appendix A, Paragraph 18.d.i; or (2) the part or parts in Appendix A, Paragraph 18.a as to which Defendants submitted a justification and data are not affected by a Class 2 Additional OBD Noncompliance, Unreported OBD Noncompliance, or 1968.5 Noncompliance, as relevant, and therefore Defendants shall maintain the warranty periods set forth in Appendix A, Paragraph 18.c for those parts. If EPA/CARB notifies Defendants that it shall extend the warranty for a part or parts as to which Defendants submitted a justification and data, Defendants may accept the decision of EPA/CARB or follow the procedures in Paragraph 15 of the Consent Decree as to those parts only.
- e. The Extended Modification Warranty shall be associated with the vehicle, and remains available to all subsequent owners and operators. Defendants shall not seek or offer a waiver of any provision of the Extended Modification Warranty.
- f. Neither the Extended Modification Warranty, nor installation of the Approved Emission Modification or any approved changes made thereto, shall supersede or void any outstanding warranty. To the extent there is a conflict in any

provision(s) of this warranty and any other warranty on any Subject Vehicles, that conflict shall be resolved to the benefit of the consumer, and Defendants shall give written notice of the resolution to EPA/CARB in the next semi-annual report. Existing applicable warranty provisions shall continue to govern, provided that if service of the ECU or TCU is needed, (1) in no event may Defendants introduce any configuration of software or calibrations that contains a Defeat Device, and (2) Defendants may decline to service the ECU or TCU if servicing the ECU or TCU would require Defendants to install or reflash any configuration other than the Approved Emission Modification or approved changes thereto. Such requirements, and the potential effect on Eligible Owners and Eligible Lessees must be clearly described in the Consumer Emission Modification Disclosure.

- g. The Extended Modification Warranty shall not modify, limit, or affect any state, local, or federal legal rights available to the owners. The Warranty shall be subject to any remedies provided by state or federal laws, such as the Magnuson-Moss Warranty Act, that provide consumers with protections, including without limitation “Lemon Law” protections, with respect to warranties.
- h. In no event shall warranty coverage under the Extended Modification Warranty be subject to service writers’ discretion.
- i. In the event that the hardware of the ECU or TCU is damaged by the software flash during installation of the Approved Emission Modification, Defendants will replace the hardware at no cost to the customer and provide a 2-year “spare parts” warranty for the replaced part.
- j. Buyback and Lease Termination Remedies. In addition to any protections provided by applicable law, Defendants must provide a Buyback or Lease Termination to any Eligible Owner or Eligible Lessee of an Eligible Vehicle that receives an Approved Emission Modification in the event that, during the 18 months or 18,000 miles (whichever comes first) following the completion of the Approved Emission Modification (the “Remedy Period”), Defendants fail to repair or remedy a confirmed failure or malfunction covered by the Extended Modification Warranty and associated with the Approved Emission Modification (a “Warrantable Failure”) after the Eligible Owner or Eligible Lessee physically presents the Eligible Vehicle to a Dealer for repair of the Warrantable Failure; and (1) the Warrantable Failure is unable to be remedied after making four separate service visits to the same Dealer for the same Warrantable Failure during the Remedy Period; or (2) the Eligible Vehicle with the Warrantable Failure is out-of-service due to the Warrantable Failure for a cumulative total of 30 days during the Remedy Period, not including any days when the Dealer returns or otherwise tenders the Eligible Vehicle to the customer while the Dealer awaits necessary parts and such vehicle remains Operable.

19. Grounds for Denial of Extended Modification Warranty. Extended Modification Warranty coverage may be denied if an Eligible Vehicle has been altered with the use of

any after-market emissions-related components, parts, and/or software, or with the removal of any original emissions-related components, parts, and/or software, and such alteration(s) are likely to substantially affect the operation of the vehicle with the Approved Emission Modifications, until the owner of such vehicle, at his or her expense, has reversed the alteration(s) such that the Approved Emission Modification will not be substantially affected.

20. Warranties for Nonmodified Eligible Vehicles. For Eligible Owners and Eligible Lessees who do not receive the Approved Emission Modification for an Eligible Vehicle, the existing applicable warranty provisions shall continue to govern, provided that if service of the ECU or TCU is needed, (1) in no event may Defendants introduce any configuration of software or calibrations that contains a Defeat Device, and (2) Defendants may decline to service the ECU or TCU if servicing the ECU or TCU would require Defendants to install or reflash any configuration other than the Approved Emission Modification. Such requirements, and the potential effect on Eligible Owners and Eligible Lessees must be clearly described in the Consumer Emission Modification Disclosure.

Attachment A

Approved Label for Emission Modification Category 1

APPROVED EMISSION MODIFICATION LABEL

EMISSION MODIFICATION PROGRAM NO:

DEALER CODE:

DATE:

U.S. EPA: **40CFR§86.1816-08 HDV**
California: **ULEV II MDV**

**This vehicle has received an
Approved Emission Modification**

The following components have been
installed or modified:

- | | | | |
|----------------------|--------------------------|-------------|--------------------------|
| - NOx Sensor | <input type="checkbox"/> | - DPF + DOC | <input type="checkbox"/> |
| - SCR-Catalyst | <input type="checkbox"/> | - TCU/HCU | <input type="checkbox"/> |
| - Instrument Cluster | <input type="checkbox"/> | - ECU | <input type="checkbox"/> |
| - Lambda Sensor | <input type="checkbox"/> | - PM Sensor | <input type="checkbox"/> |
| - Software Update | <input type="checkbox"/> | | |

Attachment B

Approved Consumer Emission Modification Disclosures for Categories 1 and 9

IMPORTANT EMISSION CAMPAIGN

2020[[MMXXXX]]

This notice applies to your vehicle, VIN: [[VIN]]

EPA & CARB Approved Emission Modification – OM642 Sprinter EMC #1

[[Month XX]], 2020

- An emission modification is available for your vehicle.
- Schedule an appointment with your authorized Mercedes-Benz dealer as soon as possible.
- This modification will be provided free of charge.

Dear Mercedes-Benz Sprinter Owner or Lessee:

On [[date]], Daimler AG and Mercedes-Benz USA, LLC (“MBUSA”) reached a settlement with the United States Department of Justice (DOJ), the Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the California Attorney General’s Office (CA AG) regarding the emission control system in your vehicle. As part of this settlement, we are offering a modification to your emission control system. The emission modification for your vehicle has been approved by the EPA and CARB, and is now ready for installation in your vehicle. Your authorized Mercedes-Benz dealer will install the modification at no cost to you.

What should YOU DO?



To find the most convenient authorized Mercedes-Benz dealer from your smartphone, scan the QR code to the left.

This letter outlines the emission control system modifications that are now available for your Sprinter vehicle and the further extended emission warranty coverage that will be provided once the modification has been completed on your vehicle. You can also read about the instructions regarding maintenance for your vehicle post-modification.

We encourage you to carefully review the information in this letter, and if we can be of further assistance, please let us know. For questions about any of the material in this letter, please visit <https://BlueTecUpdate.mbvans.com> or contact 1-833-841-9363.

I. Emission Modification

As described above, your authorized Mercedes-Benz dealer will install the emission modification that updates the emission control system software on your vehicle and involves an exchange of certain components—for all vehicles, the NOx sensors, and for certain vehicles, the SCR catalyst, engine control unit, and instrument cluster hardware. You should not notice any adverse changes in vehicle reliability, durability, performance, drivability, fuel economy, or other driving characteristics. The modification will change the way your vehicle’s engine and emission control systems interact.

The emission modification will affect your car in the following ways:

- Diesel Exhaust Fluid (DEF) consumption – The emission modification is not expected to change the frequency with which you need to refill your DEF (also known as AdBlue®) tank. However, under certain conditions, your vehicle may use more DEF as compared to prior usage. The exact amount of the change will vary depending on driving style and profile, as well as other factors.
- On-board diagnostic (OBD) system changes – The operation of your vehicle’s OBD system will be modified based upon the agreement with EPA and CARB. We do not anticipate that the modification will affect the OBD system in a manner that would make identification and repair of any components difficult, compromise warranty coverage, or compromise your vehicle’s ability to comply with the inspection and maintenance (Smog Check) test of your vehicle. Furthermore, the extended warranty coverage outlined in this letter offers additional protection for any corresponding OBD-related issues. These changes should not be noticeable to you and do not have any impact upon driving characteristics.

The emission modification is available at no cost to you. It will take approximately 3 hours to install the emission modification.

As a matter of normal service process, an authorized Mercedes-Benz dealer will also check for other repair measures which might be applicable to your vehicle; this may increase the required working time. You will not be charged for other service or repairs unless you request them.

More information regarding the technical details of this update can be found at <https://BlueTecUpdate.mbvans.com>.

II. Emission Standards/Label

Your vehicle was originally certified to EPA and CARB emission standards, and it will meet these standards after modification.

An emission modification completion confirmation label will be installed under the hood of the vehicle after the modification is completed.

III. Changes in Maintenance Schedule

The emission modification of your Mercedes-Benz Sprinter van does not affect the recommended vehicle maintenance schedule for oil change intervals as described in your maintenance booklet.

Under certain operating conditions, your vehicle's DEF usage may increase. The frequency with which you refill your DEF tank should not change.

IV. Scheduling the Emission Modification

You will receive the emission modification at no cost to you.

Vehicles receiving the emission modification will also receive an extended emission warranty covering the emission system of the modified vehicle, which includes a remedy to protect against the possibility that the modification causes subsequent service problems.

To receive the emission modification described in this letter, please schedule an appointment with your preferred authorized Mercedes-Benz dealership.

For more information about the emission modification (including when and how to visit a dealer), or to check eligibility, please visit <https://BlueTecUpdate.mbvans.com>.

V. Extended Modification Warranty Coverage

Once the emission modification has been installed in your vehicle, MBUSA will extend your warranty coverage for certain emission-related components.

Warranty Period: The warranty period for the "Extended Modification Warranty" shall be the **greater** of:

- 10 years from the date of initial sale or 120,000 miles on the odometer, whichever occurs first; **OR**
- 4 years or 48,000 miles from the date on which the emission modification was performed, whichever occurs first.

The vehicle's date of initial sale (also referred to as the vehicle's warranty start date) is defined as the date the vehicle was delivered to either the first retail purchaser or lessee; or if the vehicle was first placed in service as a "demonstrator" or "company" car, on the date such vehicle was first placed in service.

Parts Covered Under Extended Warranty: The Extended Modification Warranty covers the emission control system, including (1) all components which are replaced as part of the emission modification, and (2) any component which can reasonably be impacted by effects of the emission modification. The emission control system warranty shall cover the following parts or systems:

- DOC,
- DPF,
- SCR catalyst,
- DEF injector,
- DEF injector controller,
- DEF supply module,
- DEF pump,
- Temperature sensor unit,
- Exhaust temperature sensor,
- PM sensor,
- Lambda sensor for Emission Modification Categories 1–5,
- NOx sensors,
- Fuel injectors,
- Air intake throttle,
- EGR valve,
- EGR duct,
- EGR cooler (including bypass-control),
- Intake manifold/charge air distributor,
- EGR temperature sensor,
- Turbocharger, including VGT actuator,
- ECU hardware, where replaced as part of the Approved Emission Modification,
- TCU hardware, where replaced as part of the Approved Emission Modification,
- HCU hardware, where replaced as part of the Approved Emission Modification,
- OBD System: the cost of any OBD Diagnostic Scan for malfunctions that trigger the MIL, regardless of whether the malfunction is attributable to a part that is covered under the Extended Modification Warranty, as well as the cost of troubleshooting to determine the reason for the malfunction, but only if the malfunction is determined to be attributable to a part that is covered under the Extended Modification Warranty,
- Cylinder head assembly components: camshaft, valves, springs, valve spring keepers, valve seats, cam bearing caps, and manifold studs,
- Engine timing chain,
- Intake manifold pressure sensor,
- Instrument cluster hardware, where replaced as part of the Approved Emission Modification, and
- Coolant thermostat, where replaced as part of the Approved Emission Modification.

In our continuing efforts to assure proper performance of your Mercedes-Benz Sprinter van, your authorized Mercedes-Benz dealer will diagnose and replace the emission-related components listed in this section, if necessary, at no cost to you as long as the vehicle remains within the time and mileage limits of this warranty extension. Please keep this letter and deliver it to any new owner, along with the owner's manual.

This warranty extension covers the diagnosis and replacement of the emission-related components listed in this section. Should you ever sell the vehicle, this warranty extension is fully transferable to subsequent owners.

This warranty extension will not cover:

- Any damage or malfunctions caused by installation of non-EPA or non-CARB certified emission related parts, including damage or malfunction to parts needed for proper diagnosis of a covered part.
- Damage or malfunctions caused by or related to outside influence, such as damage due to an accident, or vehicle misuse or neglect.

All existing warranty provisions remain in effect. The extended emission warranty includes parts and labor. The extended emission warranty shall not void or supersede any existing warranty.

More information about your extended emission warranty coverage is available at <https://BlueTecUpdate.mbvans.com>.

Transferability: This extended emission warranty is fully transferable to subsequent owners.

Warranty Notices: All normal warranty provisions remain in effect.

VI. Checking Your Vehicle's Eligibility

To check your vehicle's eligibility for repair under this service campaign, please visit <https://BlueTecUpdate.mbvans.com> or call 1-833-841-9363 and provide your Vehicle Identification Number (VIN), which for your convenience can be found at the top of this letter.

If your vehicle is eligible, you may schedule an appointment to complete the emission modification quickly and easily directly from <https://BlueTecUpdate.mbvans.com> or by calling 1-833-841-9363.

VII. Customer Notices

If you choose to decline the emission modification at this time, you should be aware that certain emission-related replacement and repair parts may at some point no longer be available from Mercedes-Benz. Accordingly, in the future, if your unmodified vehicle requires maintenance and repairs of the emission system, we may need to perform the emission modification first, including, where applicable, installing the engine control unit (ECU) software associated with the emission modification. This may lead to changes to your vehicle's operation resulting from those modifications, as discussed in this letter.

If your vehicle has been modified prior to receiving the emission modification with the use of any after-market emission-related components, parts, and/or software or the removal of any original emission-related components, parts, and/or software, and such alterations are likely to substantially affect the operation of the vehicle with the emission modification, or substantially impede installation of the emission modification, your authorized Mercedes-Benz dealer may not be able to perform the emission modification until you correct such modification.

Please visit <https://BlueTecUpdate.mbvans.com> with any questions, or contact us at 1-833-841-9363.

We hope you are enjoying your Mercedes-Benz Sprinter van, and we apologize for any inconvenience.

Sincerely,

Mercedes-Benz USA

IMPORTANT EMISSION CAMPAIGN

2020[[MMXXXX]]

This notice applies to your vehicle, VIN: [[VIN]]
EPA & CARB Approved Emission Modification – GLK250 EMC#9

[[Month XX]], 2020

- An emission modification is available for your vehicle.
- Schedule an appointment with your authorized Mercedes-Benz dealer as soon as possible.
- This modification will be provided free of charge.

Dear Mercedes-Benz Owner or Lessee:

On [[date]], Daimler AG and Mercedes-Benz USA, LLC (“MBUSA”) reached a settlement with the United States Department of Justice (DOJ), the Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the California Attorney General’s Office (CA AG) regarding the emission control system in your vehicle. As part of this settlement, we are offering a modification to your emission control system. The emission modification for your vehicle has been approved by the EPA and CARB, and is now ready for installation in your vehicle. Your authorized Mercedes-Benz dealer will install the modification at no cost to you.

What should YOU DO?



To find the most convenient authorized Mercedes-Benz dealer from your smartphone, scan the QR code to the left.

This letter outlines the emission control system modifications that are now available for your GLK250 vehicle and the further extended emission warranty coverage that will be provided once the modification has been completed on your vehicle. You can also read about the instructions regarding maintenance for your vehicle post-modification.

We encourage you to carefully review the information in this letter, and if we can be of further assistance, please let us know. For questions about any of the material in this letter, please visit <https://BlueTecUpdate.mbusa.com> or contact 1-833-841-9362.

I. Emission Modification

As described above, your authorized Mercedes-Benz dealer will install the emission modification that updates the emission control system software on your vehicle and involves an exchange of certain components—specifically, the diesel oxidation catalyst, diesel particulate filter, SCR catalyst, NOx sensors, particulate matter sensor, oxygen sensor, and for MY13 vehicles, the hydraulic control unit of the transmission. You should not notice any adverse changes in vehicle reliability, durability, performance, drivability, or other driving characteristics, and some drivers may notice improved fuel economy. The modification will change the way your vehicle’s engine and emission control systems interact.

The emission modification will affect your car in the following ways:

- Diesel Exhaust Fluid (DEF) consumption – The emission modification is not expected to change the frequency with which you need to refill your DEF (also known as AdBlue®) tank. If your previous refill rate coincided with your oil change interval, that should not change with this modification. However, under certain conditions, your vehicle may use more DEF as compared to prior usage. The exact amount of the change will vary depending on driving style and profile, as well as other factors.
- On-board diagnostic (OBD) system changes – The operation of your vehicle’s OBD system will be modified based upon the agreement with EPA and CARB. We do not anticipate that the modification will affect the OBD system in a manner that would make identification and repair of any components difficult, compromise warranty coverage, or compromise your vehicle’s ability to comply with the inspection and maintenance (Smog Check) test of your vehicle. Furthermore, the extended warranty coverage outlined in this letter offers additional protection for any corresponding OBD-related issues.

These changes should not be noticeable to you and do not have any impact upon driving characteristics.

The emission modification is available at no cost to you. It will take approximately 6 hours to install the emission modification.

As a matter of normal service process, an authorized Mercedes-Benz dealer will also check for other repair measures which might be applicable to your vehicle; this may increase the required working time. You will not be charged for other service or repairs unless you request them.

More information regarding the technical details of this update can be found at <https://BlueTecUpdate.mbusa.com>.

II. Emission Standards/Label

Your vehicle was originally certified to EPA and CARB emission standards, and it will meet these standards after modification.

An emission modification completion confirmation label will be installed under the hood of the vehicle after the modification is completed.

III. Changes in Maintenance Schedule

The emission modification of your Mercedes-Benz vehicle does not affect the recommended vehicle maintenance schedule for oil change intervals as described in your maintenance booklet.

Under certain operating conditions, your vehicle's DEF usage may increase. The frequency with which you refill your DEF tank should not change.

IV. Scheduling the Emission Modification

You will receive the emission modification at no cost to you.

Vehicles receiving the emission modification will also receive an extended emission warranty covering the emission system of the modified vehicle, which includes a remedy to protect against the possibility that the modification causes subsequent service problems.

To receive the emission modification described in this letter, please schedule an appointment with your preferred authorized Mercedes-Benz dealership.

For more information about the emission modification (including when and how to visit a dealer), or to check eligibility, please visit <https://BlueTecUpdate.mbusa.com>.

V. Extended Modification Warranty Coverage

Once the emission modification has been installed in your vehicle, MBUSA will extend your warranty coverage for certain emission-related components.

Warranty Period: The warranty period for the "Extended Modification Warranty" shall be the **greater** of:

- 10 years from the date of initial sale or 120,000 miles on the odometer, whichever occurs first; **OR**
- 4 years or 48,000 miles from the date on which the emission modification was performed, whichever occurs first.

The vehicle's date of initial sale (also referred to as the vehicle's warranty start date) is defined as the date the vehicle was delivered to either the first retail purchaser or lessee; or if the vehicle was first placed in service as a "demonstrator" or "company" car, on the date such vehicle was first placed in service.

Parts Covered Under Extended Warranty: The Extended Modification Warranty covers the emission control system, including (1) all components which are replaced as part of the emission modification, and (2) any

component which can reasonably be impacted by effects of the emission modification. The emission control system warranty shall cover the following parts or systems:

- DOC,
- DPF,
- SCR catalyst,
- DEF injector,
- DEF injector controller,
- DEF supply module,
- DEF pump,
- Temperature sensor unit,
- Exhaust temperature sensor,
- PM sensor,
- Lambda sensor for Emission Modification Categories 1-5,
- NOx sensors,
- Fuel injectors,
- Air intake throttle,
- EGR valve,
- EGR duct,
- EGR cooler (including bypass-control),
- Intake manifold/charge air distributor,
- EGR temperature sensor,
- Turbocharger, including VGT actuator,
- ECU hardware, where replaced as part of the Approved Emission Modification,
- TCU hardware, where replaced as part of the Approved Emission Modification,
- HCU hardware, where replaced as part of the Approved Emission Modification,
- OBD System: the cost of any OBD Diagnostic Scan for malfunctions that trigger the MIL, regardless of whether the malfunction is attributable to a part that is covered under the Extended Modification Warranty, as well as the cost of troubleshooting to determine the reason for the malfunction, but only if the malfunction is determined to be attributable to a part that is covered under the Extended Modification Warranty,
- Cylinder head assembly components: camshaft, valves, springs, valve spring keepers, valve seats, cam bearing caps, and manifold studs,
- Engine timing chain,
- Intake manifold pressure sensor,
- Instrument cluster hardware, where replaced as part of the Approved Emission Modification, and
- Coolant thermostat, where replaced as part of the Approved Emission Modification.

In our continuing efforts to assure proper performance of your Mercedes-Benz vehicle, your authorized Mercedes-Benz dealer will diagnose and replace the emission-related components listed in this section, if necessary, at no cost to you as long as the vehicle remains within the time and mileage limits of this warranty extension. Please keep this letter and deliver it to any new owner, along with the owner's manual.

This warranty extension covers the diagnosis and replacement of the emission-related components listed in this section. Should you ever sell the vehicle, this warranty extension is fully transferable to subsequent owners.

This warranty extension will *not* cover:

- Any damage or malfunctions caused by installation of non-EPA or non-CARB certified emission related parts, including damage or malfunction to parts needed for proper diagnosis of a covered part.
- Damage or malfunctions caused by or related to outside influence, such as damage due to an accident, or vehicle misuse or neglect.

All existing warranty provisions remain in effect. The extended emission warranty includes parts and labor. The extended emission warranty shall not void or supersede any existing warranty.

More information about your extended emission warranty coverage is available at <https://BlueTecUpdate.mbusa.com>.

Transferability: This extended emission warranty is fully transferable to subsequent owners.

Warranty Notices: All normal warranty provisions remain in effect.

VI. Checking Your Vehicle's Eligibility

To check your vehicle's eligibility for repair under this service campaign, please visit <https://BlueTecUpdate.mbusa.com> or call 1-833-841-9362 and provide your Vehicle Identification Number (VIN), which for your convenience can be found at the top of this letter.

If your vehicle is eligible, you may schedule an appointment to complete the emission modification quickly and easily directly from <https://BlueTecUpdate.mbusa.com> or by calling 1-833-841-9362.

VII. Customer Notices

If you choose to decline the emission modification at this time, you should be aware that certain emission-related replacement and repair parts may at some point no longer be available from Mercedes-Benz. Accordingly, in the future, if your unmodified vehicle requires maintenance and repairs of the emission system, we may need to perform the emission modification first, including, where applicable, installing the engine control unit (ECU) software associated with the emission modification. This may lead to changes to your vehicle's operation resulting from those modifications, as discussed in this letter.

If your vehicle has been modified prior to receiving the emission modification with the use of any after-market emission-related components, parts, and/or software or the removal of any original emission-related components, parts, and/or software, and such alterations are likely to substantially affect the operation of the vehicle with the emission modification, or substantially impede installation of the emission modification, your authorized Mercedes-Benz dealer may not be able to perform the emission modification until you correct such modification.

Please visit <https://BlueTecUpdate.mbusa.com> with any questions, or contact us at 1-833-841-9362.

We hope you are enjoying your Mercedes-Benz vehicle, and we apologize for any inconvenience.

Sincerely,

Mercedes-Benz USA

Attachment C

Approved Dealer Emission Modification Disclosures for Emission Modification Categories 1
and 9

TO: Mercedes-Benz Dealer Principals, General Managers, Sales Managers, Service Managers, Parts Managers	FROM: Anthony Washington, Department Manager, Regulations and Certifications
RE: Emission Modification Notification – [[2020040001]] Model 906 (Sprinter) Model Years 2010 - 2016 Emission Modification Category (EMC) #1	DATE: [[Month XX , 2020]]

IMPORTANT EMISSIONS MODIFICATION CAMPAIGN INFORMATION

Attention Dealership Management

- Please ensure that every dealership associate is aware of this Emission Modification Campaign, and that customer-facing associates provide transparent information to customers.
- Refer to VMI in NetStar to determine which units in your inventory are affected by this Emission Modification Campaign. This notification hereby instructs **dealers not to sell or cause to be sold, or lease or cause to be leased, or introduce into commerce, or export** from the United States to another country, any vehicle covered by this notification, unless it has received the Approved Emission Modification described in this notification. **Failure to adhere to these instructions may result in possible penalties or fines.**
- Run a VMI check on all vehicles brought into your Service Department to determine if they are affected by any service campaign or recall and perform accordingly.
- Always act with the principles of Customer Experience in mind.
- Refer to the work instructions and ensure each step in the defined process is followed exactly as described. Steps such as affixing the vehicle label and correctly filling out the vehicle label must be adhered to. **Failure to adhere to these instructions may result in possible penalties or fines.**
- Ensure your warranty administrator submits warranty claims for this recall in a timely manner. Extended warranty applicability stated herein is automatically enabled once the Approved Emission Modification is completed and the warranty claim is processed.
- Customers should **not** be given information about the Emission Modification or the class settlement that deviates from, or is in addition to, what is in authorized communications reflected in this NCU or the official websites: **[class settlement website]** and <https://BlueTecUpdate.mbusa.com> **Failure to adhere to this instruction could threaten final implementation of the settlement and may result in possible penalties.**
- A proposed class action settlement has been filed that provides compensation to customers who receive the Emission Modification and meet certain other requirements. To receive such compensation, class members will need to submit (among other things) copies of their Repair Order showing proof that the Emission Modification was installed and (if any) proof of transportation expenses incurred to receive the Emission Modification—up to \$35—in the event that a loaner, shuttle, or alternative transportation cannot be arranged by your dealership. Please remind customers to save this documentation.
- Other than the benefits class members can claim through the class action settlement process, customers cannot be offered any compensation in exchange for receiving the Emission Modification. **Failure to adhere to this instruction may result in possible penalties.** (At their discretion and on a case-by-case basis, Dealers can continue to offer customers goodwill for other reasons consistent with normal business practices and policies, but additional compensation in exchange for receiving the Emission Modification is prohibited.)



Information for customers:

- For information related to this specific Emission Modification, customers can refer to: <https://BlueTecUpdate.mbvans.com>.
- *[if the preliminary approval motion has been filed, then add:]* For information related to the proposed class action settlement, Customers can refer to: [settlement URL]
- Mercedes-Benz Customer Assistance Center: **1-833-841-9362**

Please note that all customer inquiries should be directed to the Customer Assistance Center at 1-833-841-9362.

Sincerely,

Anthony Washington

Department Manager, Regulations and Certifications



Regulations and Certifications

Campaign Launch Notification			[[Month, 2020]]
Campaign No.:	EMC#	Campaign Desc. :	BlueTEC Update – Sprinter MY10-16
[[2020XXXXXX]]	1	[[1XXXXXXX]]	
<p>This is to notify you of an Emission Modification Campaign Launch to update the emission control system on approximately [[XXXX]] Model Year (“MY”) 2010-2016 Mercedes-Benz Sprinter vehicles. The Emission Modification Campaign will be visible on the https://BlueTecUpdate.mbvans.com website and may generate questions from customers. Affected VINs will be flagged in VMI as “OPEN” on [[Month XX, 2020]].</p>			
Background			
Issue	Mercedes-Benz USA, LLC (“MBUSA”) is modifying the emission control system on certain diesel vehicles. The Emission Modification for six-cylinder MY10-16 Mercedes-Benz Sprinter vehicles has been approved by the EPA and CARB, and is now ready for installation. An authorized Mercedes-Benz Sprinter dealer will install the Emission Modification at no cost to the customer.		
What We’re Doing	An authorized Mercedes-Benz Sprinter dealer will replace certain emission control system components and update certain software in eligible vehicles.		
Parts	Parts are available to order.		
Vehicles Affected			
Vehicle Model Year(s)	MY 2010-2016		
Vehicle Model	Platform 906 (Sprinter)		
Vehicle Populations			
Total Campaign Population	[[XXXX]]		
Total Customer Vehicles in Campaign	[[XXXX]]		
Next Steps/Notes			
Customer Notification Timeline	Customer letters will be mailed on [[Month XX, 2020]].		
AOMS/SOMS	This Emission Modification Campaign may initiate questions from customers and the Media. Please ensure your dealers have read and understand this notice.		
Rental Fleet Partners	This Emission Modification Campaign may affect vehicles in your fleet. Please contact your respective MBUSA fleet representative for further information and next steps. For repairs, please contact your preferred Mercedes-Benz Sprinter dealer.		
Notes	<ul style="list-style-type: none"> • IMPORTANT: This notification hereby instructs dealers not to sell or cause to be sold, or lease or cause to be leased, or introduce into commerce, or export from the United States to another country, any vehicle covered by this notification, unless it has received the Approved Emission Modification described in this notification. Failure to adhere to these instructions may result in possible penalties or fines. • Follow ALL steps of the work instructions. • More information about a class action settlement providing incentives to customers who receive the Emission Modification can be found at [settlement URL]. • Emission Modification information:: <ul style="list-style-type: none"> • Mercedes-Benz specific emission-modification-related information: https://BlueTecUpdate.mbvans.com • Customer Assistance Center: 1-833-841-9362 		
<p>While we regret any inconvenience this may cause, MBUSA is determined to maintain a high level of vehicle quality and customer satisfaction. Please refer all customer inquiries to the Customer Assistance Center at 1-877-496-3691.</p>			



DEALER FAQs

What is the reason for this Emission Modification?

On [\[\[date\]\]](#), Daimler AG (“DAG”) and Mercedes-Benz USA, LLC (“MBUSA”) reached a settlement with the United States Department of Justice (“DOJ”), the Environmental Protection Agency (“EPA”), the California Air Resources Board (“CARB”), and the California Attorney General’s Office (“CA AG”) regarding the emission control system in MY09 to MY16 OM642 and OM651 BlueTEC II diesel vehicles sold or leased in the US. As part of this settlement, MBUSA is offering Owners and Lessees a modification to the vehicles’ emission control systems, referred to as an Emission Modification.

Eligible vehicles and vehicle model years have been separated into Emission Modification Categories (“EMC”) to facilitate the campaign. Each EMC will be launched in phases, pending agency approval. Please refer to our public website <https://BlueTecUpdate.mbvans.com> for more information on your particular vehicle.

The Emission Modification for the six-cylinder Mercedes-Benz Sprinter vans has been approved by the EPA and CARB, and is now ready for installation in customer vehicles. MBUSA will be working with EPA and CARB to secure approval for Emission Modifications for the remaining eligible vehicles, and will notify authorized Mercedes-Benz dealers upon approval of each Emission Modification.

What is an “EMC”?

To facilitate the emission modifications on the subject vehicle population, the vehicle models and model years have been separated into Emission Modification Categories, “EMCs,” as shown on the second page of this NCU.

What are the eligible vehicles that will receive an Emission Modification under this settlement?

This settlement pertains specifically to vehicles equipped with four and six cylinder (OM651 & OM642) diesel engines sold between MY09 and MY16. For more information, please visit <https://BlueTecUpdate.mbvans.com>.

How will the repair be communicated to Owners and Lessees in the US?

Vehicle owners and lessees will receive a letter in the mail letting them know that the Emission Modification for their vehicle is available and to bring in their vehicle to their preferred, authorized, Mercedes-Benz dealer. Additional outreach efforts will be implemented as well.

How do Owners and Lessees find out whether their vehicle is affected by the Emission Modification Campaign?

Owners and Lessees with affected vehicles will be mailed a notification letter when the Emission Modification is available. Owners and Lessees can always check if their vehicle is affected by entering their VIN into the following site: <https://BlueTecUpdate.mbvans.com>.

All vehicles covered by the Emission Modification Program also are covered by the proposed class action settlement described above.

Owners and Lessees might complain about a Check Engine light; will the dealer repair the vehicle as part of the emission update?

A Check Engine light can illuminate for a number of reasons. Authorized Mercedes-Benz Sprinter dealers can offer assistance diagnosing and repairing the issue.



Can an Owner or Lessee get a loaner vehicle or alternate transportation while the repair is being performed?

Where loaner vehicles are available, Dealers are requested to offer loaner vehicles to each Eligible Owner and Eligible Lessee at no cost where the implementation of the Approved Emission Modification will take 3 hours or longer to complete.

In an instance where the Approved Emission Modification takes 3 hours or longer to complete, and where the Dealer does not make available a loaner car or offer a shuttle service or alternative transportation, Class Members will be eligible to submit a claim for transportation costs of up to \$35 along with their claims for other settlement compensation. For more information on the transportation allowance, customers should visit the class action settlement website at www.XXXXXXXXXX.com, and should be reminded to save their receipts.

What is Mercedes-Benz going to do for Owners and Lessees given this inconvenience?

Dealers will attempt to minimize any inconvenience during the repair process. Should Owners or Lessees experience an excessive delay with the repair of their vehicle, they can contact our Customer Assistance Center at 1-833-841-9362.

Where can an Owner or Lessee have the Emission Modification work completed?

Owners and Lessees will be asked to contact their local, preferred, authorized Mercedes-Benz Sprinter dealer to arrange for an appointment to complete the FREE Emission Modification.

Can Owners and Lessees have the Emission Modification performed if they did not receive a Customer Letter but own a Mercedes-Benz Sprinter BlueTEC Diesel vehicle?

Owners and Lessees should first check the eligibility and status of their vehicle by visiting <https://BlueTecUpdate.mbvans.com>. To be automatically alerted when the Emission Modification is available for their vehicle, customers are being asked to complete the "Keep me Updated" section of the website after entering their VIN to check the status.

Do Owners and Lessees have to wait for the Emission Modification Campaign letter before their vehicle can be fixed?

Owners and Lessees do not need to present a copy of the recall repair letter to receive the FREE repair, but they should wait to bring their vehicle in for the repair until they receive notice that the Emission Modification has been launched for their specific vehicle model. The Emission Modifications will be launched in phases, pending agency approval, so the Emission Modifications for all of the subject vehicle models (all MY09 to MY16 BlueTEC II vehicles with OM642 and OM651 engines sold or leased in the US) will not be launched at the same time. Once the Emission Modification has been approved for a particular vehicle type, Owners and Lessees will be sent a letter asking them to schedule an appointment with their authorized Mercedes-Benz Sprinter dealer to perform the FREE repair.

Do Owners and Lessees need the Owner/Lessee Letter to have the Emission Modification performed?

No, Owners and Lessees with eligible vehicles do not need the Customer Letter to have this FREE Emission Modification completed. Local authorized Mercedes-Benz Sprinter repair facilities can check the eligibility and status of Customer vehicles without the Customer Letter.

What about Owners or Lessees who request that the repair be performed without first receiving a Customer Letter?

No Emission Modification can be performed until EPA and CARB approve the Emission Modification for the specific model.



When will parts be available?

Parts are currently available for the Emission Modification Campaigns which have been approved by EPA and CARB. We will provide updates as parts become available for other vehicle models.

Regarding all other future vehicle categories, MBUSA is working with EPA and CARB to obtain approvals for the Emission Modification. MBUSA will notify dealers upon approval of each Emission Modification that the Emission Modification has become available.

For up-to-date parts availability information, please refer to the website <https://BlueTecUpdate.mbvans.com>.

Are there any known vehicle symptoms associated with the Emission Modification that Owners or Lessees will notice that should lead them to stop driving the car or take to a dealer?

No. There is no symptom related to the Emission Modification.

What is the expected impact on an Owner's or Lessee's vehicle after the Emission Modification has been performed?

Details on the impact to vehicles are provided in the Owner/Lessee letter for each Emission Modification Category. A copy of the Owner/Lessee letter for the EMC subject to this FAQ is attached.

What types of repairs or replacements are needed?

Authorized Mercedes-Benz Sprinter Dealers will replace specific emission-related components in Customer vehicles. This varies by model and model year. For more information, please visit <https://BlueTecUpdate.mbvans.com>.

How long does this replacement take?

Replacement time is dependent upon the model and model year. This time may range from 30 minutes to a maximum of 6 hours. Details are provided in the Owner/Lessee Letter.

What if vehicles have been modified using after-market parts and/or software? Can the Emission Modification still be performed?

If the vehicle has been modified prior to receiving the Emission Modification in a manner that may yield a non-compliant emission system (for example, removal of a catalyst, installation of parts that impact emission or emission-related parts, or modifications to the ECU or computer software of the vehicle), Dealers might not be able to perform the Emission Modification until the prior modifications are corrected, which will be at the Owner's/Lessee's cost. Once corrected, the vehicle may receive the Emission Modification.

What if Owners or Lessees decline to have the Emission Modification performed?

If Owners or Lessees decline the Emission Modification at this time, they should be advised that certain emission-related replacement and repair parts may no longer be available from MBUSA at some point.

If a current Owner or Lessee of an eligible vehicle does not have the Emission Modification installed, they cannot claim the ["x" dollars] payment under the proposed class action settlement.

Will eligible vehicles have any warranty on the Emission Modification?

Yes. Once the Emission Modification is performed, certain components will have an extended warranty for the greater of 4 years/48,000 miles from the date of installation of the Emission Modification or 10 years/120,000 miles from the initial sale date of the vehicle. This extended warranty remains with the vehicle and is fully transferable to



subsequent owners until expiration. Where loaner vehicles are available, Dealers are requested to offer loaner vehicles to each Eligible Owner and Eligible Lessee at no cost where extended warranty repairs exceed three hours to complete.

Can Owners or Lessees be denied coverage under the Extended Warranty for the Emission Modification?

The Extended Warranty for the Emission Modification may be denied if an eligible vehicle has been altered with the use of any after-market emission-related components, parts, and/or software, or with the removal of any original emission-related components, parts, and/or software, and such alteration(s) are likely to substantially affect the operation of the vehicle with the Emission Modifications, until the owner of such vehicle, at his or her expense, has reversed the alteration(s) such that the Emission Modification will not be substantially affected.





Mercedes-Benz

Campaign No. 2020040007, October 2020

TO: ALL MERCEDES-BENZ and FREIGHTLINER SPRINTER CENTERS

SUBJECT: **Model 906 (Sprinter)**
Model Year 2013
Modification to the emissions control system

Daimler Vans USA, LLC ("DVUSA") and Mercedes-Benz USA, LLC ("MBUSA") are performing an emissions campaign on certain 906 Sprinter vehicles in order to modify to the vehicles' emissions control system. EPA and CARB have approved this emissions modification for these MY13 Sprinter (Model 906) vehicles. An authorized Mercedes-Benz or Freightliner Sprinter dealer will replace certain emissions control system components and update certain software in the affected vehicles at no cost to the owner of the vehicle.

Prior to performing this Emissions Campaign:

- Please check VMI to determine if the vehicle is involved in the emissions modification campaign and if it has been previously repaired. Always Check VMI for any open campaigns, and perform accordingly.
- Please review the entire Emissions Campaign bulletin and follow the repair procedure exactly as described.

Approximately 2,863 vehicles are involved.

Order No. V-RC-2020040007

This bulletin has been created and maintained in accordance with MBUSA-SLP S423QH001, Document and Data Control, and MBUSA-SLP S424HH001, Control of Quality Records.

Emissions Campaign Work Instruction

Measure to be performed on a lift

Model: Sprinter

Engine: 6-Cylinder Diesel (OM 642)

Model Year: MY 13

Campaign Number: 2020040007

Campaign Code Word: NC34213NEC

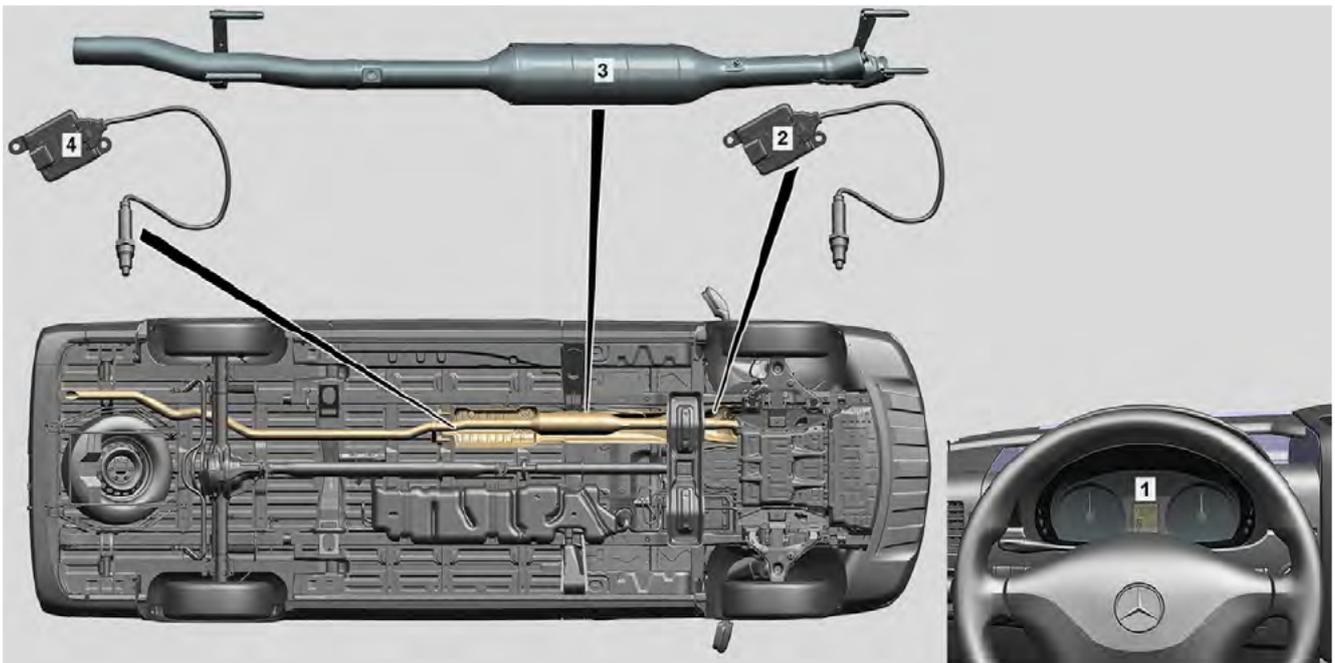
Damage Code: 07 972 65

Labor Time:

2.5 hours

Additional x.x hours to perform Emissions Modification

Pre-Inspection



Scope of Work: [\[Insert Link /QR-Code for Animated Work Instructions\]](#)

Work procedure:

Read the complete instructions

- | | |
|---|--|
| 1 | Replace instrument cluster |
| 2 | Replace NO _x sensor upstream of SCR catalytic converter |
| 3 | Replace SCR catalytic converter |
| 4 | Replace NO _x sensor downstream of SCR catalytic converter |

Risk of injury. Skin or eye injuries may result when handling hot or glowing objects.

	Risk of injury. Skin or eye injuries may result when handling hot or glowing objects.	Wear protective gloves, protective clothing and safety glasses, if necessary.	 Warning
--	--	---	--

Risk of injury

Contact with hot or glowing objects without suitable protective clothing causes severe burns to skin and eyes.

When glowing objects come into contact with water, they produce hot steam or cause the water to splash, which can cause serious burns to skin or eyes.

If hot or glowing objects come into contact with unprotected skin or eyes, they can cause serious and even permanent injuries.



There is a risk of fire when glowing objects come into contact with combustible material.

Safety precautions/instructions

- Wear protective clothing, safety glasses and heat-resistant gloves.
- Only transport hot or glowing objects with suitable aids.
- Avoid the formation of sparks and contact with combustible material when handling glowing objects.

First aid measures

- Treat affected areas of skin with plenty of cold water and cover with sterile dressings.
- Consult a physician immediately.

Risk of accident from vehicle starting off by itself when engine running. Risk of injury (bruises and burns) resulting from working on the engine while it is being started or when it is running.

	<p>Risk of accident from vehicle starting off by itself when engine running. Risk of injury (bruises and burns) resulting from working on the engine while it is being started or when it is running.</p>	<p>Secure vehicle to prevent it from starting off by itself. Wear closed and snug-fitting work clothes. Do not touch hot or rotating parts.</p>	 Warning
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Potential risks

Risk of accident

Caused by the vehicle starting off by itself during the starting procedure

(e.g. during compression test) **due to engaged gear** or with the engine running and vehicles with automatic transmission **due to selector lever position "P" or**

"N" not being engaged (except for vehicles that do not have selector lever position "P").

Risk of injury

Severe injuries can be caused by freely rotating parts in the area of the running engine.

Because the engine heats up when operating, serious burns can be caused by touching unshielded parts.

Safety instructions/precautions

- In general, only work on a running engine when it is absolutely necessary.
- **Apply parking brake** before starting the engine.
- The vehicle is to be secured against moving forwards or backwards.
- The person performing tests on a vehicle with the engine running must sit in the driver's seat to be able to prevent the vehicle from moving.

- It is not permitted for persons to be in the danger zone in front of or behind the vehicle while tests are being performed.
- **Shift the gearshift lever to neutral** on vehicles with manual transmission.
- On vehicles with automatic transmission, move **selector lever into position "P" or "N"** (except for vehicles that do not have selector lever position "P").
- On vehicles that do not have selector lever position "P", the **selector lever** is to be **secured against unauthorized access**.
- Wear closed and snug-fitting work clothes.
- Remove all jewelry such as necklaces, rings, etc.
- Wear suitable head wear to cover long hair.
- Before commencing any work on the running engine, familiarize yourself with the location of potentially hot parts.
- When carrying out work when starting the engine or when the engine is running, **do not touch any hot or rotating parts**.
- Use the exhaust extraction system.

First aid measures in the event of burns

- Do not rub the skin areas affected; rinse with plenty of cold water and cover skin with sterile dressings.

- Consult a physician immediately.

Risk of injury. Moving parts can pinch, crush or, in extreme cases even sever extremities.

	Risk of injury. Moving parts can pinch, crush or, in extreme cases even sever extremities.	No parts of the body or limbs should be within the operating area of mechanical components when moving components.	 Warning
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Risk of injury

When working on components that can be moved either by hand, by means of electric motors, or hydraulically/ pneumatically via a connecting mechanism, serious injuries can occur due to body parts being cut, pinched or crushed.

Safety instructions/precautions

- Monitor hazard area.

- Secure the operating area of mechanical components against interference when parts are in motion.
- Never touch the mechanism of a component while it is being actuated by electric motors via the diagnosis or by direct actuation (terminal 30).
- Choose a test cable of sufficient length.

Risk of death caused by vehicle slipping or toppling off of the lifting platform.

	Risk of death caused by vehicle slipping or toppling off of the lifting platform.	Align vehicle between vehicle lift columns and position the four support plates at the vehicle lift support points specified by the vehicle manufacturer.	 Danger
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Risk of accident and injury

Ensure that the vehicle is ideally aligned and secured against tilting according to the general safety specifications and regulations.

Non-observance of the safety specifications can cause the vehicle to **slip off** the lift system and thereby result in **life threatening** or **fatal** injuries.



This list of hazards is not complete.

The safety specifications of the respective country are always valid. The user is personally responsible for complying with these.

Risk of burn injuries and scalding when working at AdBlue® lines and the components attached to them. Risk of injury to skin and eyes when handling AdBlue®. Risk of poisoning caused by swallowing AdBlue®

	<p>Risk of burn injuries and scalding when working at AdBlue® lines and the components attached to them. Risk of injury to skin and eyes when handling AdBlue®. Risk of poisoning caused by swallowing AdBlue®</p>	<p>Pour AdBlue® into suitable containers only. Wait until the pressure is released before starting any work on the exhaust aftertreatment system.</p>	<p> Warning</p>
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Potential risks

Risk of burn injuries and scalding

The AdBlue® lines and all components attached to them are under pressure during operation and remain so after the engine is switched off and may be hot. There is a risk of burn injuries. There is a risk of scalding caused by escaping hot AdBlue® when the line system is opened.

Risk of injury

There is a risk of skin irritation and eye damage on contact with AdBlue®.

Risk of poisoning

There is a risk of poisoning if AdBlue® is swallowed.

Rules of conduct

- On vehicles with electrical delivery pump, the AdBlue® is pumped from the line back into the AdBlue® tank after the engine is switched off.

- On vehicles with a compressed air system, individual lines are flushed with compressed air after the engine is switched off. The engine must therefore be switched off for at least 5 minutes before work on the exhaust aftertreatment system may begin.
- Open connections and plugs on the system components slowly. Cover the connecting point with rags when opening.
Only pour AdBlue® into marked containers specially designated for the purpose. Do not pour AdBlue® into drinking containers.
- Wipe up any AdBlue® spills immediately as there is a high risk of someone slipping.

Safety precautions for handling removed parts and working under the vehicle

- Wear suitable protective gloves
- Wear protective clothing
- Wear safety glasses

First aid measures

Contact with skin: Wash the affected skin areas with plenty of clean water. Change wetted clothing as quickly as possible.

Contact with eyes: In the event of contact with eyes, immediately rinse eyes thoroughly with plenty of clear water; contact an eye doctor if necessary.

Ingestion: rinse mouth with clean water and drink large quantities of water. Immediately seek medical assistance.

Firefighting measures

AdBlue® is not combustible. NH₃ (ammonia) can be released in the event of fire, causing a risk of poisoning. Firefighting measures must therefore be suited to the surroundings.

Risk of burn injuries, suffocation and poisoning when working on the exhaust system and the components connected to it. Risk of suffocation and risk of poisoning caused by inhalation of gaseous and solid components of the exhaust. Risk of poisoning caused by skin contact with solid components of the exhaust.

	<p>Risk of burn injuries, suffocation and poisoning when working on the exhaust system and the components connected to it. Risk of suffocation and risk of poisoning caused by inhalation of gaseous and solid components of the exhaust.</p> <p>Risk of poisoning caused by skin contact with solid components of the exhaust.</p>	<p>Wear protective clothing and safety glasses. Use the extraction system. Move people out of the hazard area.</p>	<p> Warning</p>
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Risk of burn injuries

The exhaust system and all components connected to it are very hot during operation and remain so after the engine is switched off. Do not touch hot parts.

Risk of suffocation and poisoning

Exhaust gases may also cause cancer.

At higher concentrations, irritation of mucous membranes and headaches may occur. Carbon monoxide may cause damage to unborn children.

Avoid inhalation of exhaust gases; wear respiratory protection.

Use the exhaust extraction system.

Risk of injury

Risk of injury to the eyes, skin, and respiratory paths due to contact with exhaust residues such as diesel particulates

and diesel soot. To prevent skin contact on hands, wear nitrile gloves.

First aid measures

In the event of inhalation:

Move victim from the hazard area to fresh air without endangering yourself and consult a physician immediately.

After contact with skin:

Immediately wash affected areas of the body with plenty of soap and water. Employees who have experienced skin contact must consult a physician immediately.

After contact with eyes:

Rinse eyes thoroughly with running water for at least ten minutes with the eyelids wide open and contact an eye doctor immediately.

Risk of explosion from explosive gas. Risk of poisoning and caustic burns from swallowing battery electrolyte. Risk of injury through burns to skin and eyes from battery acid or when handling damaged lead-acid batteries

	<p>Risk of explosion from explosive gas. Risk of poisoning and caustic burns from swallowing battery electrolyte. Risk of injury through burns to skin and eyes from battery acid or when handling damaged lead-acid batteries</p>	<p>No fires, sparks, open flames or smoking. Wear acid-resistant gloves, clothing and glasses. Only pour battery acid into suitable and appropriately marked containers.</p>	
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Potential risks

Risk of explosion

When charging lead batteries with battery electrolyte containing sulfuric acid, a highly explosive oxyhydrogen gas mixture is created that ignites by means of fire, sparks, open flames and smoking.

Risk of injury

The battery electrolyte contains diluted sulfuric acid that causes caustic burns to the skin, eyes and mucous membranes in the event of contact. Bonded electrolyte is just as caustic as liquid electrolyte. Battery electrolyte mist causes caustic burns to the eyes. If inhaled, this can result in caustic burns to the mucous membranes and respiratory paths. In the event of a short circuit from the battery positive to ground, battery terminals and conductive objects causing short circuit, e.g. tool or jewelry (watch band or

ring), become hot in seconds and red hot/liquid metal sprays are released.

Risk of burn injuries

In the event of a short circuit from the battery positive to ground, battery terminals and conductive objects causing short circuit, e.g. tool or jewelry (watch band or ring), become hot in seconds and cause burns.

Risk of poisoning

If battery electrolyte is swallowed, this can result in symptoms of poisoning such as headache, dizziness, stomach ache, respiratory paralysis, unconsciousness, vomiting, caustic burns and cramps. Absorption of lead in the body through contact with leaded components (battery terminals, lead plates in damaged batteries) damages the blood, nerves and kidneys; lead compounds are also toxic for reproduction.

Safety precautions/instructions

- Wear acid-resistant gloves and clothing and safety glasses with side guards.
- Only charge lead batteries in well ventilated rooms with appropriate voltage and appropriate current with approved chargers, taking into account the instructions of the battery and battery charger manufacturers.
- No fire, sparks, open flames and smoking.
- Switch on the battery charger only after connecting to the terminals; switch off the battery charger before disconnecting from the terminals.
- Do not place any conductive objects on the battery and do not wear any conductive jewelry (risk of short circuit).
- Always disconnect the negative terminal first; always connect the positive terminal first (risk of short circuit caused by tool).
- Strict caution is required when handling damaged batteries (removing from vehicle damaged in accident) because of the sharp edges on the fractured housing and escaped electrolyte.
- Keep batteries and battery electrolyte away from unauthorized persons (especially children).
- Only fill liquid battery electrolyte into suitable and appropriately marked containers.
- Only store, transport and install batteries with liquid battery electrolyte horizontally, otherwise battery electrolyte can escape from the degassing holes.
- Ensure that at least one degassing hole at the battery is not sealed, as otherwise overpressure builds that leads to bursting of the battery.
- Ensure proper connection of the degassing line to the degassing hole.
- Ensure the degassing line does not have any kinks and is not blocked at any point.
- Observe the instructions for use for the respective lead batteries and the operator's manual of the vehicle.
- The battery housing may become brittle over time, therefore do not expose the battery to direct sunlight.
- Discharged batteries may freeze and are thereby damaged, therefore always store batteries at a location protected against frost.

Risk of explosion from explosive gas. Risk of poisoning and caustic burns from swallowing battery electrolyte. Risk of injury through burns to skin and eyes from battery acid or when handling damaged lead-acid batteries

First aid measures

Contact with eyes

- Rinse eyes immediately with plenty of water.

Contact with skin

- Remove wet clothing.
- Immediately neutralize battery electrolyte on the skin or clothing with acid neutralizer or soapy water and rinse off with plenty of water.
- Wash off lead on the skin immediately with water and soap.

Inhalation of battery electrolyte mist

- Take the affected person out into the fresh air.

Swallowing battery electrolyte

- Have the person affected drink plenty of water with activated charcoal supplement.

As a general rule, the person affected should consult a medical service or physician after first aid has been rendered.

Fire protection measures

Suitable extinguishing agents

- CO₂ and dry extinguishing agent



Warning notes for lead batteries with battery electrolyte containing sulfuric acid

- | | | | | | |
|---|---|---|-----------------------|---|-------------------------|
| 1 | No fire, sparks, open flames or smoking | 4 | Risk of caustic burns | 6 | Keep away from children |
| 2 | Risk of explosion | 5 | Wear eye protection | 7 | First aid |
| 3 | Observe operating instructions | | | | |

	Risk of injury caused by contact with battery gel when handling damaged lead-gelbatteries	No fires, sparks, open flames or smoking. Wear acid-resistant gloves, clothing and glasses.	 Warning
--	--	---	--

Potential risks

Risk of poisoning

Swallowing battery gel can cause symptoms of poisoning such as headaches, dizziness, stomach aches, respiratory paralysis, unconsciousness, vomiting, caustic burns and cramps.

The absorption of lead in the body can cause damage to blood, nerves and kidneys; in addition, lead compounds are considered to represent a reproductive hazard.

Risk of injury

The bonded electrolyte set free is just as caustic as a liquid electrolyte that can cause heavy caustic burns to skin and eyes. Strict caution is required when handling damaged lead-gel batteries (e.g. removing from vehicle damaged in accident) because of the sharp edges on the fractured housing and direct contact with the lead plates.

Safety precautions and rules of conduct

- No fires, sparks, open flames or smoking.

- Do not place any tool or other conductive object on the lead-gel battery (risk of short circuit!).
- Disconnect and remove lead-gel batteries for charging.
- Always **disconnect the negative terminal first** and always **connect the positive terminal first** .
- Only switch on the battery charger after connecting to the terminals and switch off before disconnecting.
- Keep lead-gel batteries away from unauthorized persons (especially children).
- Pay attention to instructions for use of the particular lead-gel battery and the operator's manual for the vehicle.
- Wear acid-resistant clothing and safety glasses with side guards.
- Only pour acid gel into suitable and appropriately marked containers.

First aid measures

Contact with eyes

- Rinse out eyes immediately with plenty of water.

Contact with skin

- Remove moistened clothing.
- Immediately neutralize drops of acid or gel on skin or clothing with acid neutralizer or soapy water and rinse off with plenty of water.

Swallowing battery gel

- Have the person affected drink plenty of water supplemented with activated charcoal.

After performing first aid, always consult medical service or a physician.

Fire protection measures

Suitable extinguishing agents

- CO₂ and dry extinguishing agent

	Notes on avoiding damage through contamination and foreign objects		Topical note
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Information on affected component parts

With each maintenance and repair work to the engine as well as to the ancillary assemblies and detachable parts comes the danger of property damage caused by contamination and foreign bodies.

Particularly at risk are:

- Exhaust gas turbocharger
- Hot film mass air flow sensor
- Compressor
- Emission control system
- All components involved in gas exchange

Notes on removal/installation

Openings through which soiling or foreign objects are introduced into the engine, its ancillaries or detachable parts, must be sealed immediately.

For this purpose, suitable, clean covers and plugs or clean, lint-free rags are to be used.



Do not forget to remove all covers, plugs or rags when assembling or when finalizing the work.

This avoids any damage and complaints about engine running characteristics.



Before assembling or finalization work all components are to be checked for soiling, left-over foreign objects and any fluids, and if any are found they are to be removed.

Information on cleaning

For cleaning, use only clean tools and clean, lint-free rags.

Residues of cleaning agents and removed contaminants must be cleared from the engine, ancillary assemblies and detachable parts.



Do **not** use compressed air for removing any soiling.

Otherwise, components (e.g. the hot-wire element of the hot film mass air flow sensor) could be damaged or contamination could enter the engine, ancillary assemblies and detachable parts without being noticed.

	Notes on use, material properties and handling of AdBlue®		Topical note
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Tasks of AdBlue®

AdBlue® serves to convert nitrogen oxides into water vapor and nitrogen.

Chemical characterization and composition of AdBlue®

The urea content is 32.5%. AdBlue® consists of urea dissolved in demineralized water. AdBlue® is not an additive.

Chemical formula: H₂N-CO-NH₂

Molecular weight (urea): 60.06 g/mol

CAS (Chemical Abstracts Service) no.: 57-13-6

Marking

AdBlue® dispensers are marked with the standard designation ISO 22241 or with the trade designations AdBlue® or Diesel Exhaust Fluid (DEF).

Transport

In vehicles with BlueTEC technology, AdBlue® is carried in a tank.

Physical and chemical properties of AdBlue®

State: Liquid

Color: Colorless, clear, light-yellow

Odor: Slight ammonia odor

pH value: 10 (aqueous solution, 10 %)

Crystallization temperature: -11 °C / 12 °F

Boiling point: 103 °C / 217 °F

Auto-ignition temperature: Not spontaneously inflammable

Density: approx. 1.09 g/cm³ at 20 °C / 68 °F

Viscosity (dynamic): approx. 1.4 mPa*s at 25 °C / 77 °F

Handling contaminated operating fluids

It is essential that AdBlue® be kept separate from other operating fluids, fuels and lubricants such as coolant,

engine oil, transmission oil, fuel, hydraulic fluid and brake fluid and not used in the same containers and collecting bowls. The smallest amounts of AdBlue® can damage thermostats or temperature sensors.

Operating fluids which contain traces of AdBlue® must not be used again.

Handling contaminated AdBlue®

AdBlue® must be checked as per the repair instructions before every fill. Individual components of the exhaust aftertreatment system already react very sensitively with even the smallest traces of contaminants in AdBlue®. When handling AdBlue® it is important, therefore, to always use clean containers and collecting bowls which are only reserved for this purpose. Contaminated AdBlue® must not be used again.

Handling contaminated materials

It is essential that AdBlue® does not come into contact with materials used in the interior of the vehicle. AdBlue® exposed to air passes within just a few hours from a liquid state into the crystalline state and can therefore damage and destroy contaminated surfaces.

Textiles, e.g. the reversible mat in the luggage compartment, which have been fouled with AdBlue® should be alternately cleaned and then rinsed with water several times.

It must be ensured that there are no further traces of AdBlue® in the textiles.

Handling contaminated tools

All tools coming into contact with AdBlue® must be thoroughly cleaned with water immediately after use!

Only fully dried measuring instruments and filling tools should be used so as not to dilute the AdBlue® concentration.

Protecting components when working with AdBlue®

AdBlue® leads to corrosion on electronic components and strong fouling on all other materials. It is therefore necessary to cover up all components in the vicinity over the whole surface with plastic foil when working in circumstances where AdBlue® could leak out.

Storage and packaging

Storage at temperatures between 0°C/32°F and 25°C/77°F should be ensured in order to avoid crystallization occurring

in AdBlue®. To avoid deterioration in quality due to contamination, AdBlue® must only be handled in storage and filling systems intended exclusively for AdBlue®. Suitable container materials are alloyed steel, various plastics and plastic coatings in metal containers.

Not to be used are unalloyed steel, aluminum, copper, copper-containing alloys and zinc-dipped steel.

Service life and durability

AdBlue® breaks down during storage into ammonium hydroxide and carbon dioxide and then no longer fulfills the requirements of standard ISO 22241.

If the recommended storage temperature of a maximum of 25°C/77°F is maintained, the AdBlue® will fulfill the requirements of this standard for at least 18 months after manufacture. If this recommended storage temperature is exceeded then this period is reduced. Duration of storage and the temperatures to be used are given as guideline values at the end of the document. At temperatures below -11°C/12 °F, the AdBlue® freezes and becomes solid.

On warming up again the frozen AdBlue® becomes liquid again and can be reused without any loss of quality.

The maximum permissible service life of AdBlue® can be taken from the **MB Specifications for Operating Fluids**.

Disposal and degradability

Disposal of AdBlue®:

When disposing of AdBlue® the legal requirements of the country in which the AdBlue® is used must be observed.

Contaminated packaging/materials:

Packaging which contains residues of AdBlue® is to be handled like the substance itself. Packaging should be emptied as well as possible; it can then be reused after appropriate cleaning with water.

Constant ambient conditions

Storage temperature in °C/°F - Durability in months

≤10 / 50 - 36

≤25 / 77 - 18

≤30 / 86 - 12

≤35 / 95 - 6

>35 / 95 - --

	Information on preventing damage to electronic components due to electrostatic discharge		Topical note
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Electrostatic charge

Every contact and every physical separation of materials or every movement of solids, liquids or charged particle-containing gases can generate electrostatic charge. Plastics generally produce the highest electrostatic charge.

We come across electrostatic charge or discharge in lots of everyday situations, e.g. with:

- Combs
- Walking on carpets or plastic floors
- Putting on and taking off textiles with synthetic fiber content
- Disembarking from the vehicle
- Contact between various electrostatically chargeable packaging materials in shelves or in the transport container

The resulting electrostatic discharge (**Electrostatic Discharge (ESD)**) can be so strong that a small electric shock is detected. Even the smallest discharges which people cannot detect can cause lasting damage to electronic components and control units.

Effects and consequences of ESD

Electronic components and control units are very sensitive to ESD. The damage is often not immediately obvious, but becomes apparent some time later. In order to avoid failures and damage due to ESD in vehicle electronics, various procedures and safety precautions must be taken into account and followed.

Risk of damage arises during the transportation, handling, testing, removal and installation of electronic components during production and repair work.

The following electronic components listed as an example can be damaged by ESD:

- Airbag components
- Control units, in particular their bus connections
Controller Area Network (data bus/CAN bus) (CAN),
Local Interconnect Network (LIN) etc.
- Sensors
- Mechatronic component parts (actuators etc.)
- Antenna amplifier
- Receivers and displays (Radio, TV, GPS, telephone etc.)

Modes of behavior and safety precautions

- Electrostatic discharge of the technician (e.g. by briefly touching the vehicle body).
- Suitable clothing, e.g. made of cotton.
- Wear ESD safety shoes with conductive soles.
- Keep workplace clean and clear away unnecessary objects such as conventional plastics.
- Special antistatic seat cushion protectors should be used when performing repair work inside a vehicle.
- Leave replacement parts in the original packing for as long as possible, do not tear open seals but cut them open carefully.
- The ESD workplace must conform to the ESD guidelines.

- The operation-specific documentation in the WIS must be observed and the specified special tools and/or workshop equipment must be used in each case.
- Before unpacking, discharge ESD protective packaging at the ESD workplace.
- Avoid any contact with electrostatic chargeable materials such as, e.g. polyethylene, PVC, styrofoam.
- Use only original packaging or specially labeled and defined packaging and transport materials.
- Electronic components which have been removed must be put down on an ESD workplace.
- Electrical connectors on electronic component parts and in the wiring harness should be touched by their housing only. Do not touch pins or contacts!
- Electronic components must be installed before they are connected so that potential equalization with the body can take place.
- Shelves and worktables must stand directly on the floor, there must not be any insulating materials between the base of the shelves/feet and the floor. If the above mentioned insulators cannot be removed, the shelves and work tables must be grounded (e.g. low-resistance electrical connection/line from metal shelf to a coolant pipe).
- Do not put down conductive containers/crates when insulated,
(e.g. on a wooden pallet), as otherwise potential equalization will not take place.

- Do not place control units and electronic components removed from the vehicle on electrostatically chargeable materials, such as PE, PVC, styrofoam. The

electrostatic charge is transferred to the control unit or electronic component. An ESD service kit or a connected ESD table mat must be used.

Training

It is strongly recommended that every company has an ESD officer trained in accordance with DIN EN 61340-5-1.

The ESD officer can carry out staff training courses.

The aim of the training measures is to communicate the main problems and effects of ESD to staff:

- Discharge generation
- Reasoning for safety precautions
- Effects and consequences of ESD
- ESD rules of conduct and safety precautions

Return of electronic components in warranty and goodwill cases

When returning electronic components it is absolutely essential to observe the procedure and safety precautions listed. The original fault may be falsified or hidden by electrostatic charge/discharge.

This can lead to distorted fault symptoms in the case of the fault analysis of the component concerned.

	Notes on carrying out repair work in the vehicle interior		Topical note
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In order to prevent soiling or damage, the following information must be observed:

- Before starting repairs in the vehicle interior, the corresponding protective covers must be provided in the repair area for the floor coverings, seats, steering wheel, etc. to prevent them from becoming dirty.
- Persons performing work in the vehicle interior should ensure they have clean work clothes, clean shoes and clean hands.
- When removing bulky or difficult to handle parts (e.g. bench seat, roof lining, instrument panel etc.), always work with aid of at least a second person.
- Do not use dirty or unapproved tools. This prevents any, e.g. scratching or crazing of interior parts etc.
- Always place removed interior parts on a clean and soft surface.

Further information:

- Repair or replace damaged interior parts (particularly mounts such as retaining clips, Velcro fasteners etc.).
- When installing interior parts at the intended locations, install insulation material and/or protective foils, or, replace insulation material/protective foils as required in order to dampen vibrations and noise.
- Many equipment parts in the area of the vehicle interior have been installed or made specifically to the customer's request, and cannot be replaced easily if damaged or soiled; for this reason, utmost care must be ensured when carrying out operations in the vehicle interior.
- Remove any dirt present with cleaners approved by Daimler and suitable for corresponding surfaces. When doing so, where possible, the compatibility of the cleaning agent should be tested at a concealed area of the part to be cleaned.

Preparatory activities

- 1 Switch off the ignition.
- 2 Disconnect Geotab, Omni Track, Navigation or any aftermarket devices that are connected to the X11/4 diagnostic socket.
- 3 Open the hood.



- 4 Connect the battery charger as indicated.



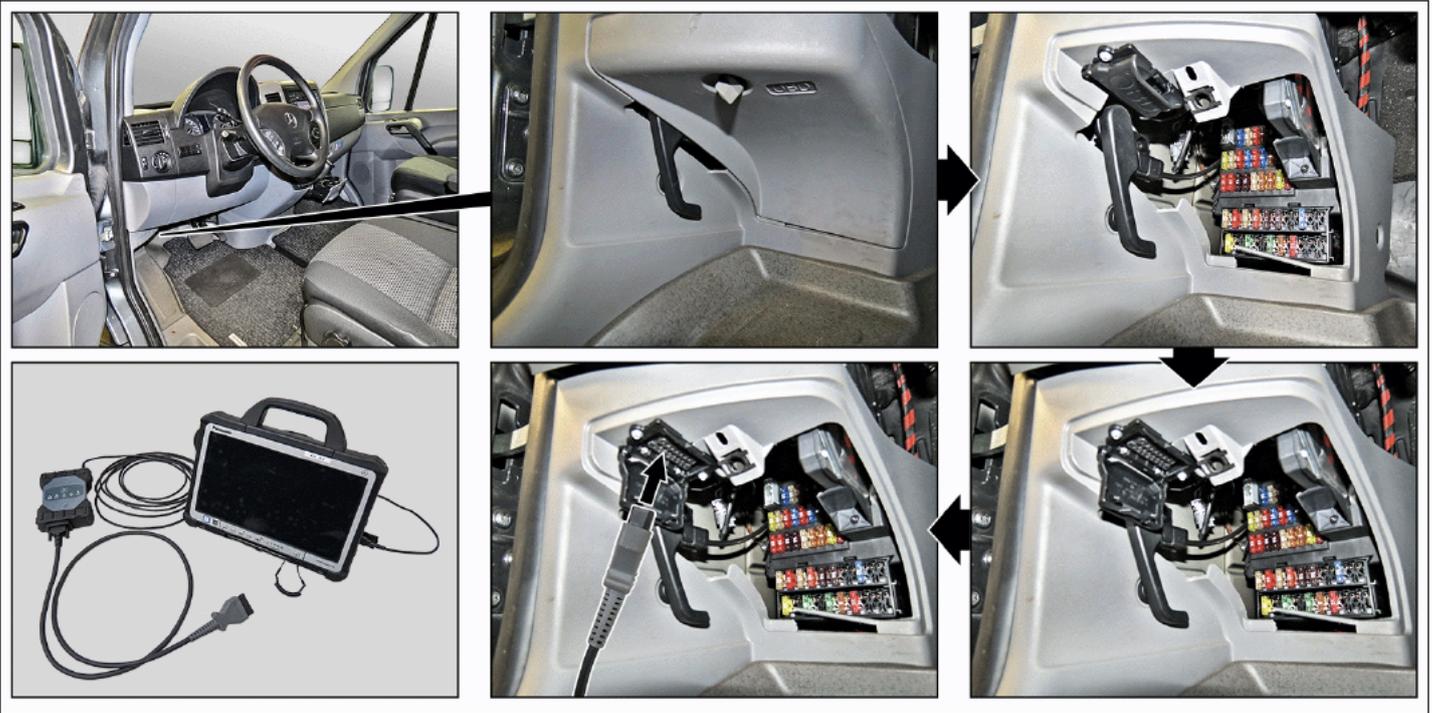
A sufficient power supply to the vehicle on-board system must be ensured throughout the entire work procedure. Otherwise any undervoltage that occurs may damage the control units.



Do not connect the battery charger to the auxiliary battery in the engine compartment.



Follow the operating instructions for the battery charger. Use a Mercedes-Benz recommended battery charger to ensure an adequate voltage supply (min. 12.5 V) is provided for the on-board electrical system battery.



5 Connect the diagnostic system. Make sure that the OBD2 connection cable is connected directly to the factory X11 / 4 diagnostic socket and not via an adapter cable.

6 Switch on the ignition.



The diagnostic system remains connected to the vehicle throughout the work procedure! Do not disconnect the diagnostic system's online connection.

7 Start the diagnostic system.

8 Run XENTRY and perform Quick test and transmit to paperless pXD.

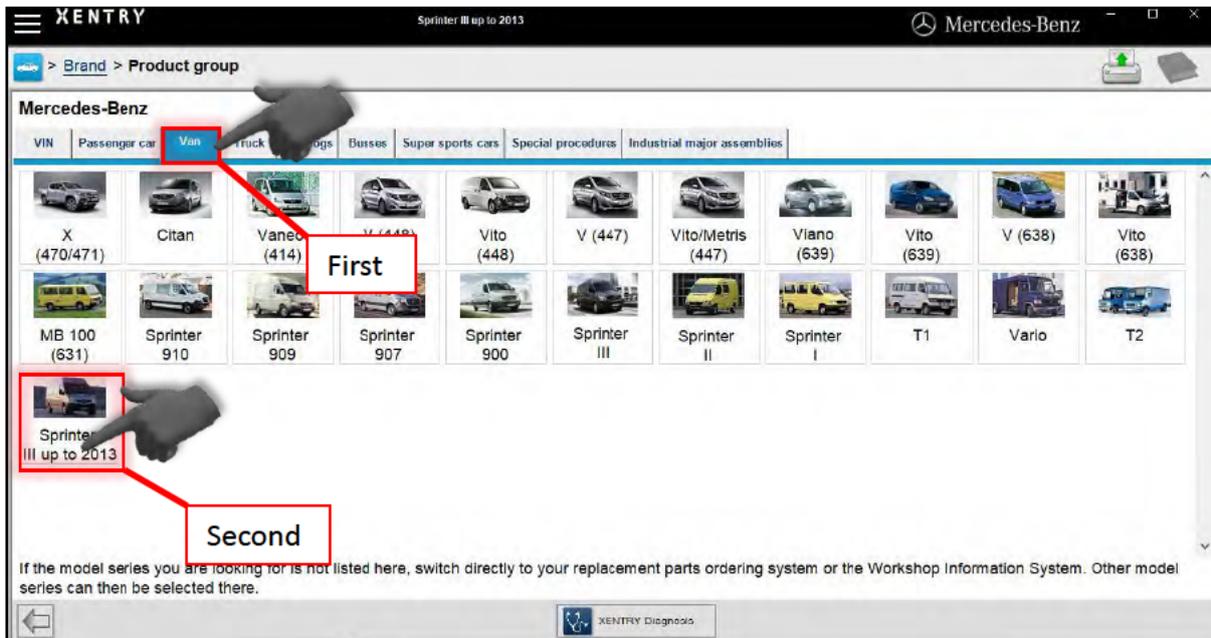


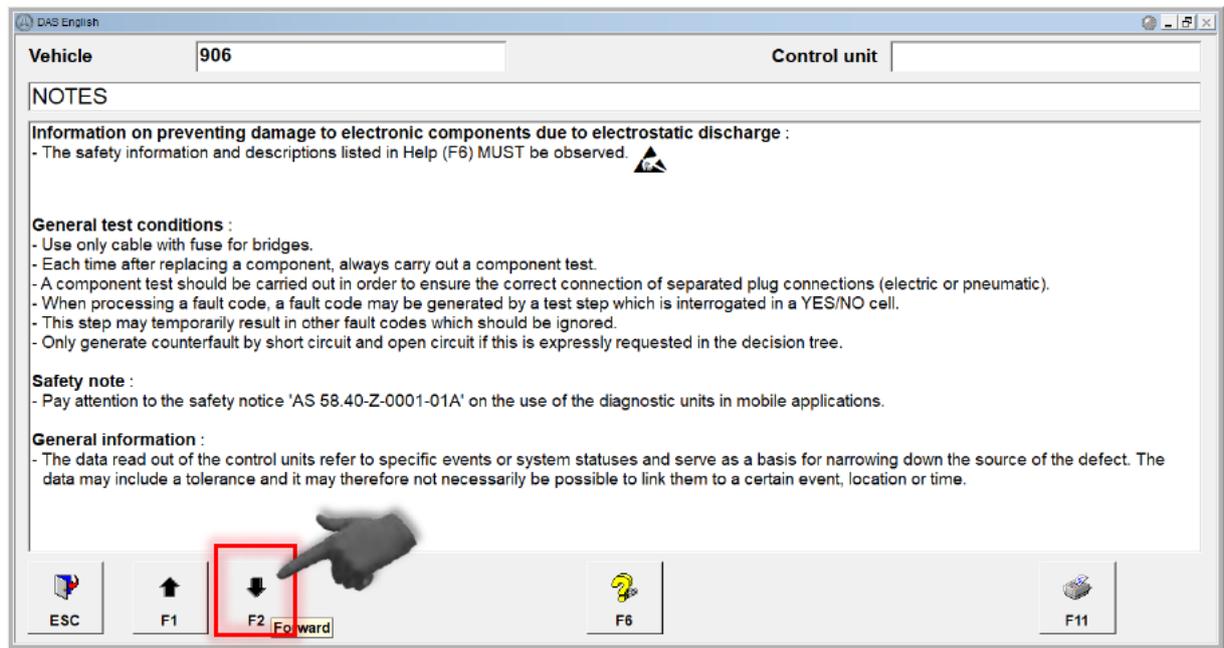
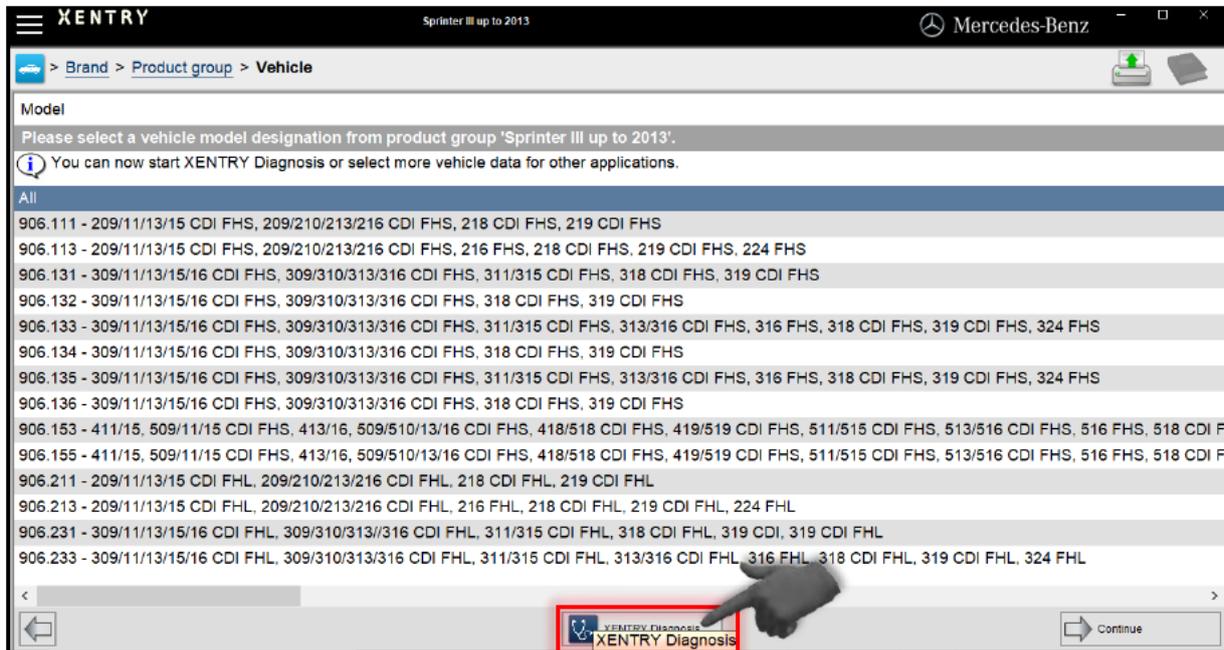
Faults stored in the memory, caused by disconnected lines during the inspections, must be deleted from the fault memory after completing the work.

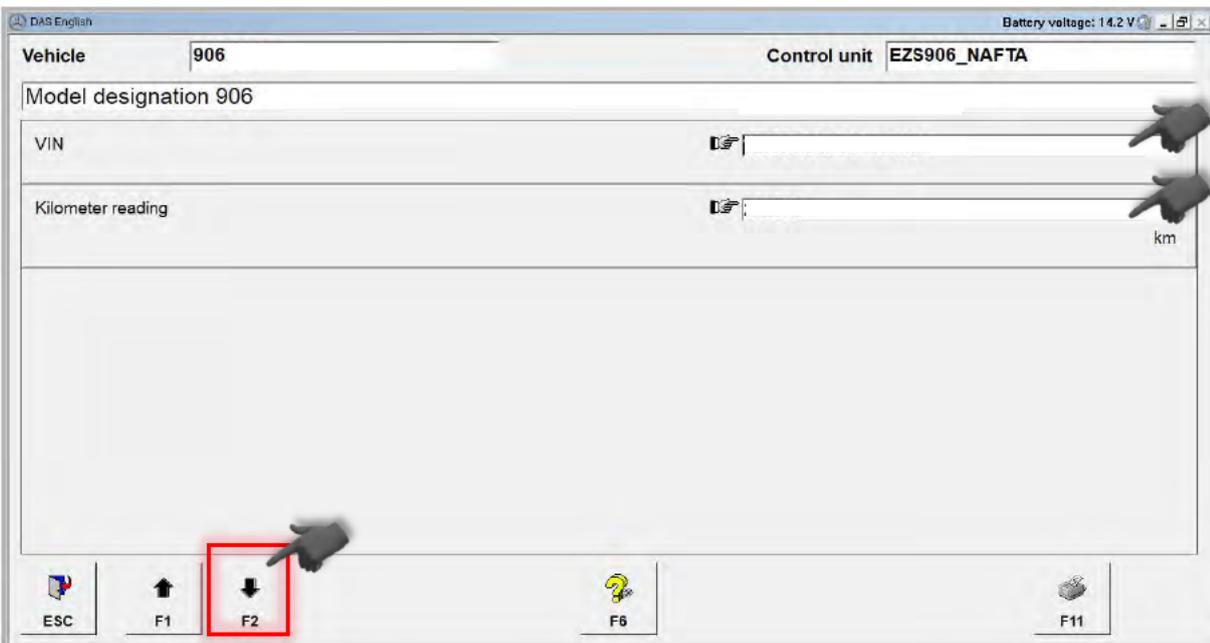
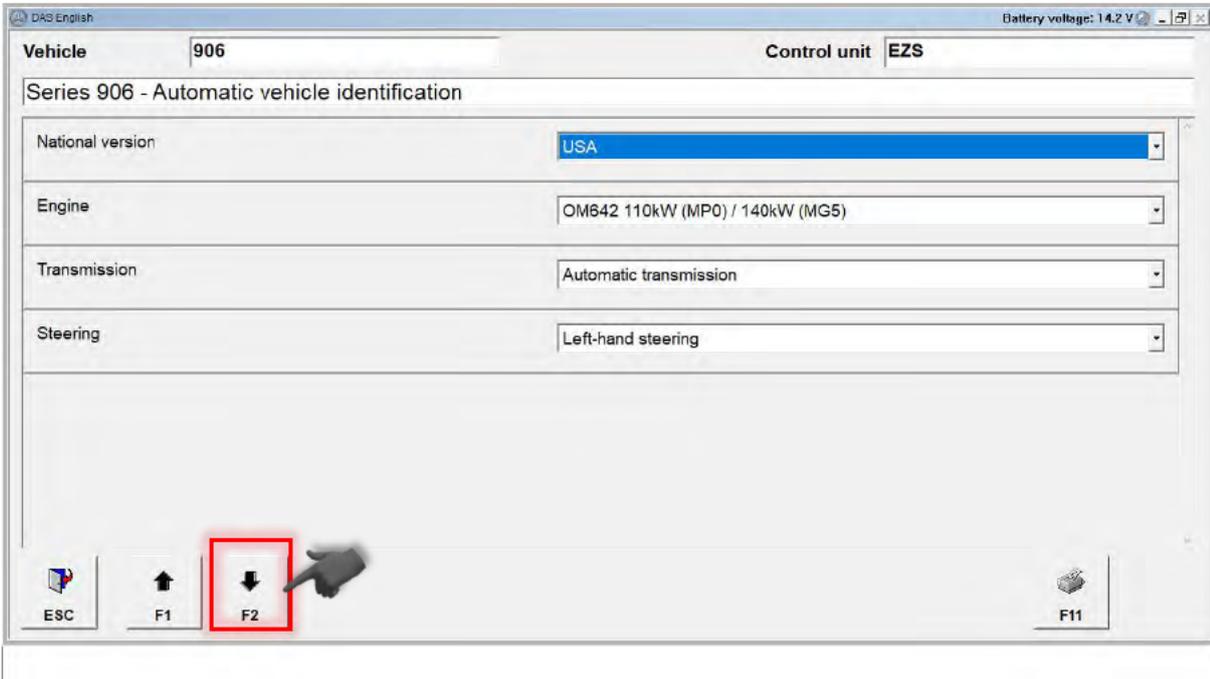


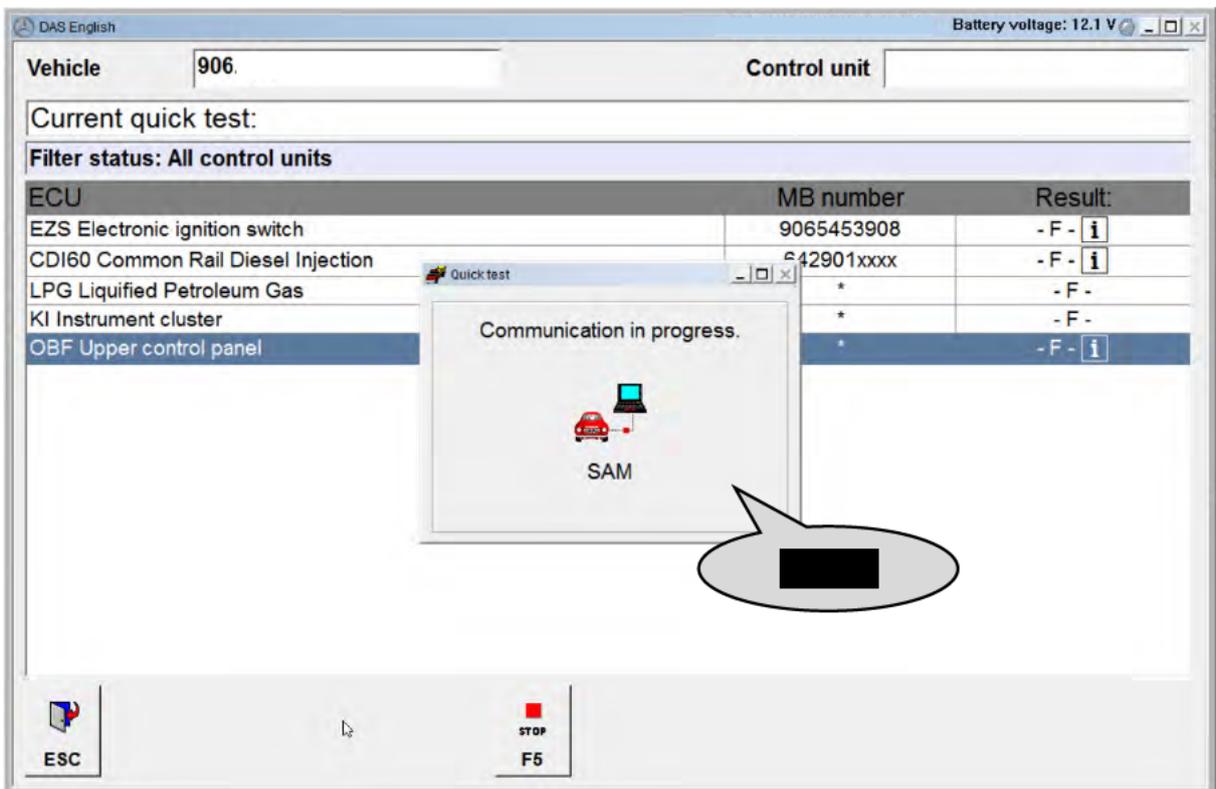
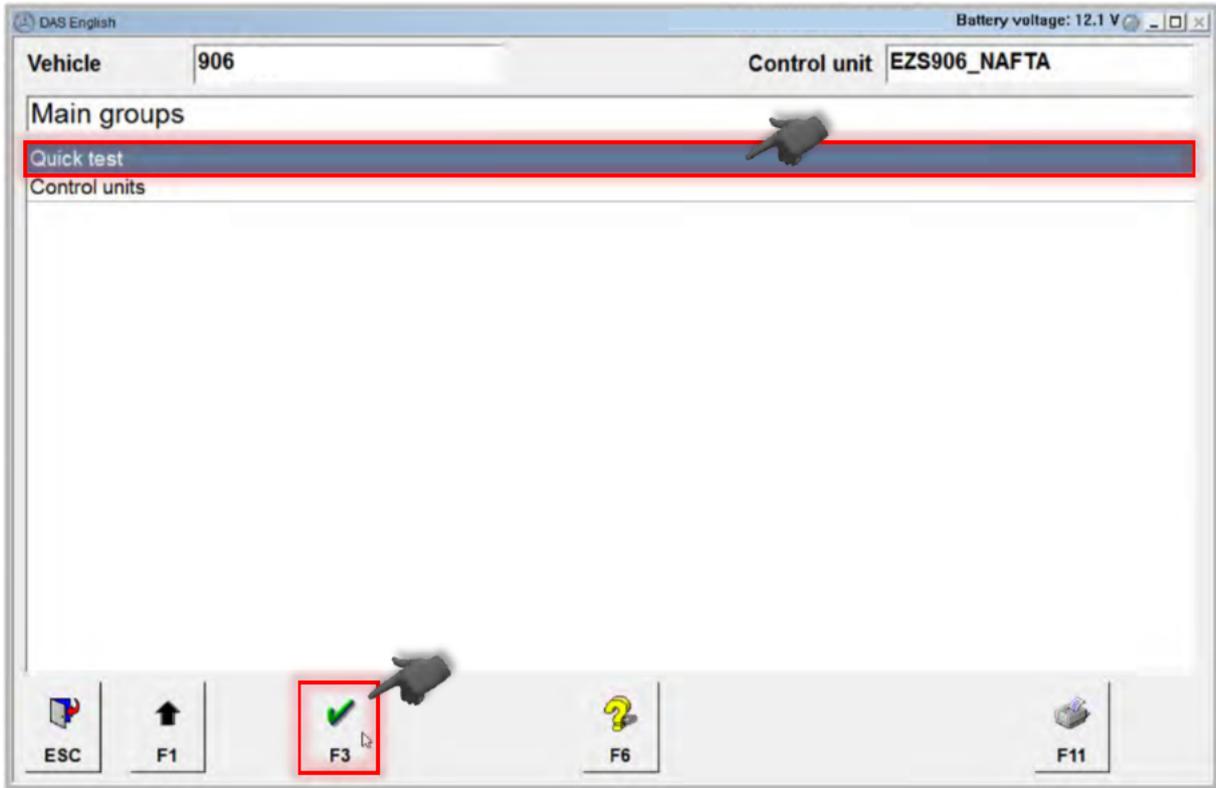
The procedure via the diagnostic system is shown on the following pages.

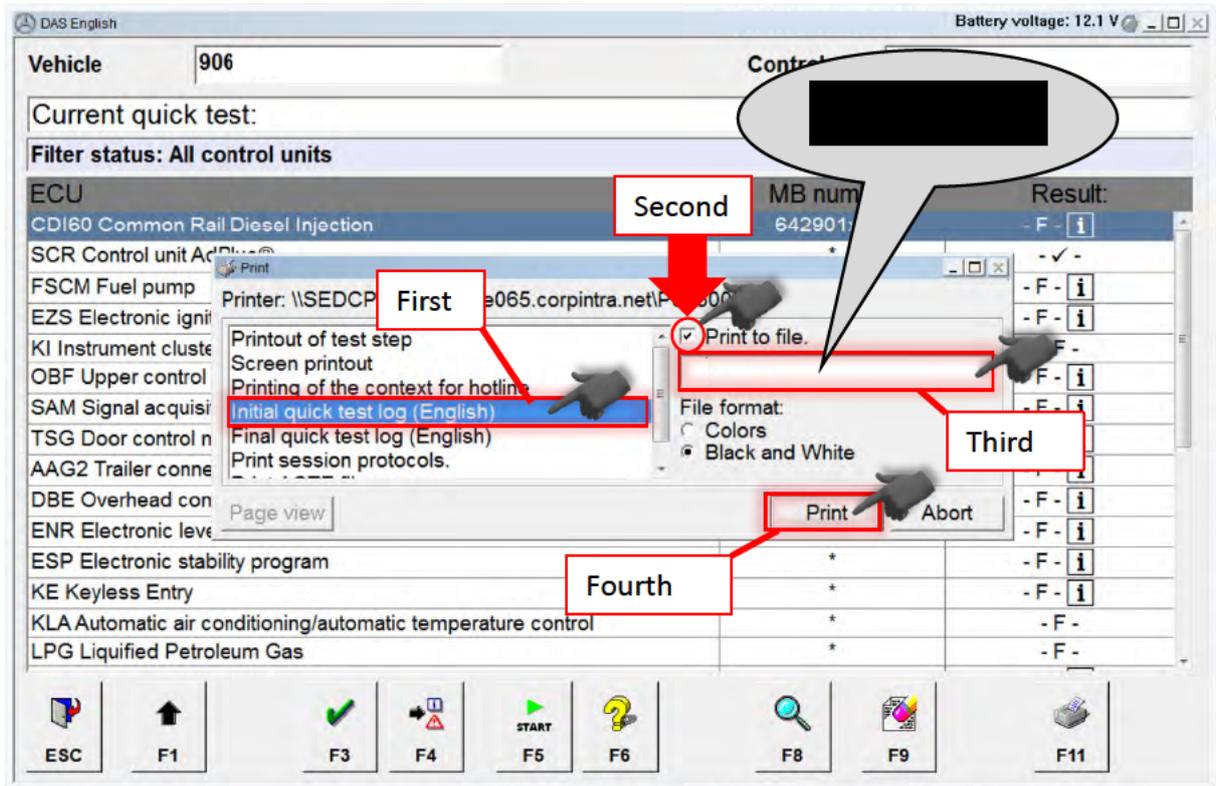
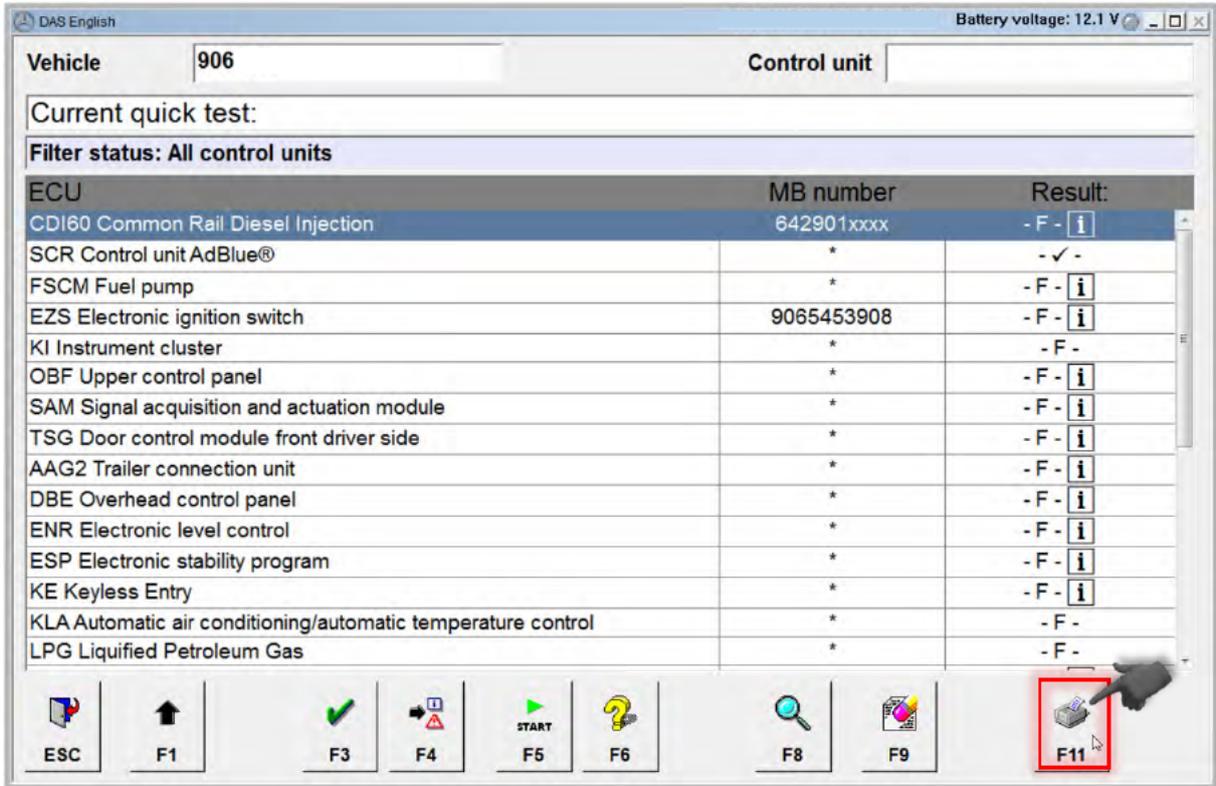
9 Perform Emissions Modification Pre-Inspection.



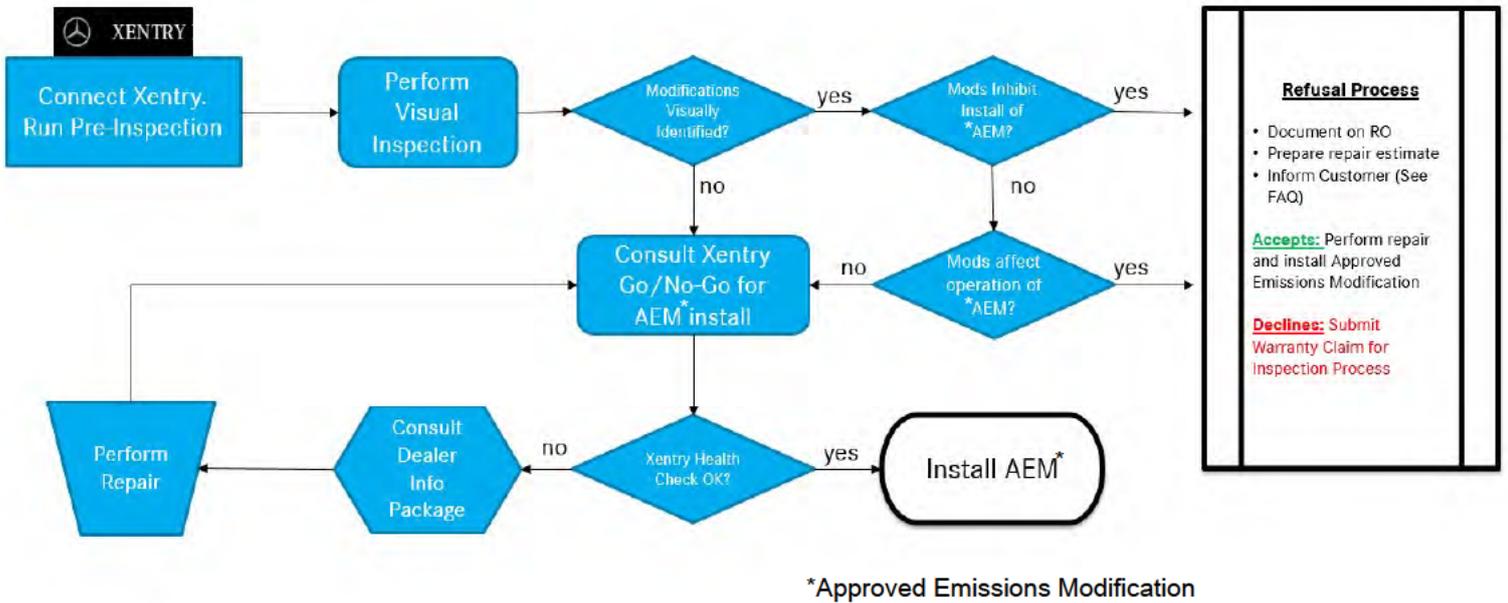








Emissions Modification Pre-Inspection



- 10 Perform Initial startup of the instrument cluster (1).



The operation steps must be performed exactly as per the diagnostic system.

To do this, select the following menu items: KI Instrument cluster

→ Initial startup → Initial startup with automatic takeover of settings of previous control unit.



The procedure via the diagnostic system is shown on the following pages.

DAS English Battery voltage: 12.1 V

Vehicle 906 Control unit

Current quick test:

Filter status: All control units

ECU	MB number	Result:
CDI60 Common Rail Diesel Inject	642901xxxx	- F -
SCR Control unit AdBlue®	*	- ✓ -
FSCM Fuel pump	*	- F -
EZS Electronic ignition switch	9065453908	- F -
KI Instrument cluster	*	- F -
OBF Upper control panel	*	- F -
SAM Signal acquisition and actuation module	*	- F -
TSG Door control module front driver side	*	- F -
AAG2 Trailer connection unit	*	- F -
DBE Overhead control panel	*	- F -
ENR Electronic level control	*	- F -
ESP Elect program	*	- F -
KE Keyless	*	- F -
KLA Automatic air conditioning/automatic temperature control	*	- F -
LPG Liquefied Petroleum Gas	*	- F -

ESC F1 **F3** F4 F5 F6 F7 F8 F9 F11

First (points to KI Instrument cluster row)

Second (points to F3 button)

DAS English Battery voltage: 12.1 V

Vehicle 906 Control unit KI

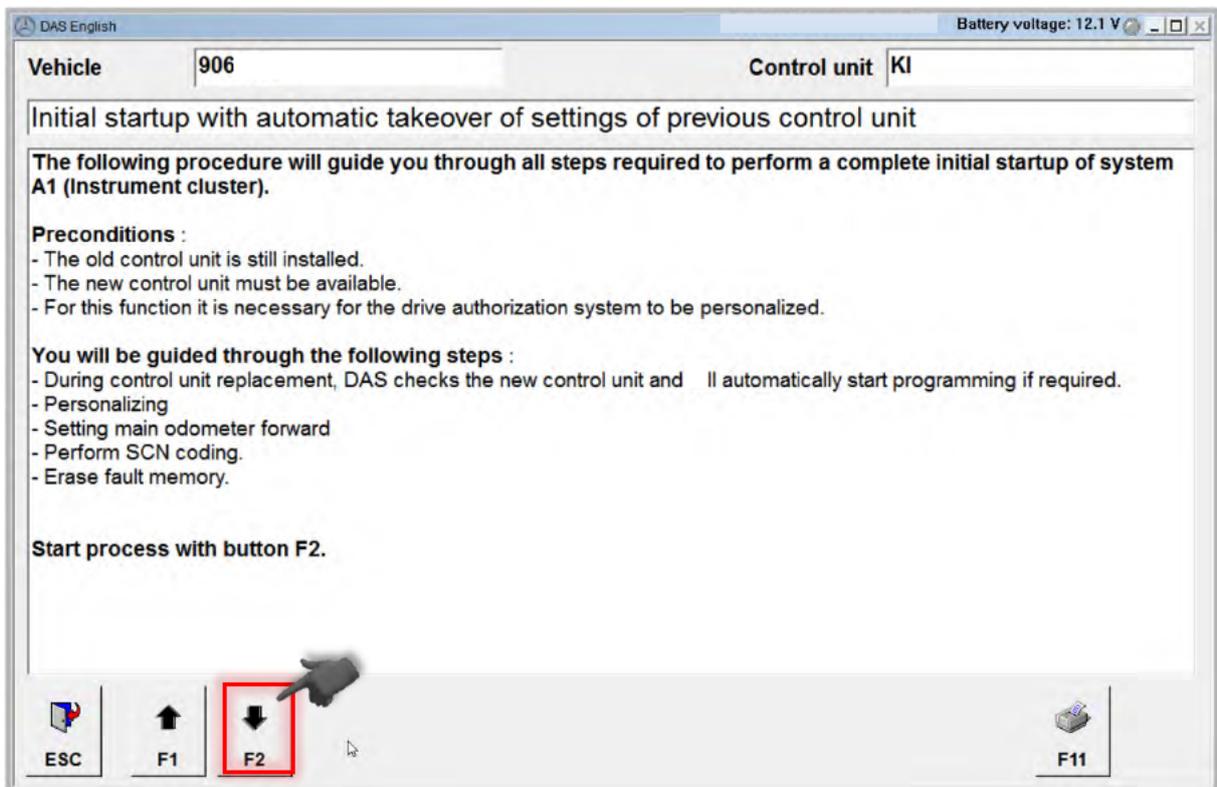
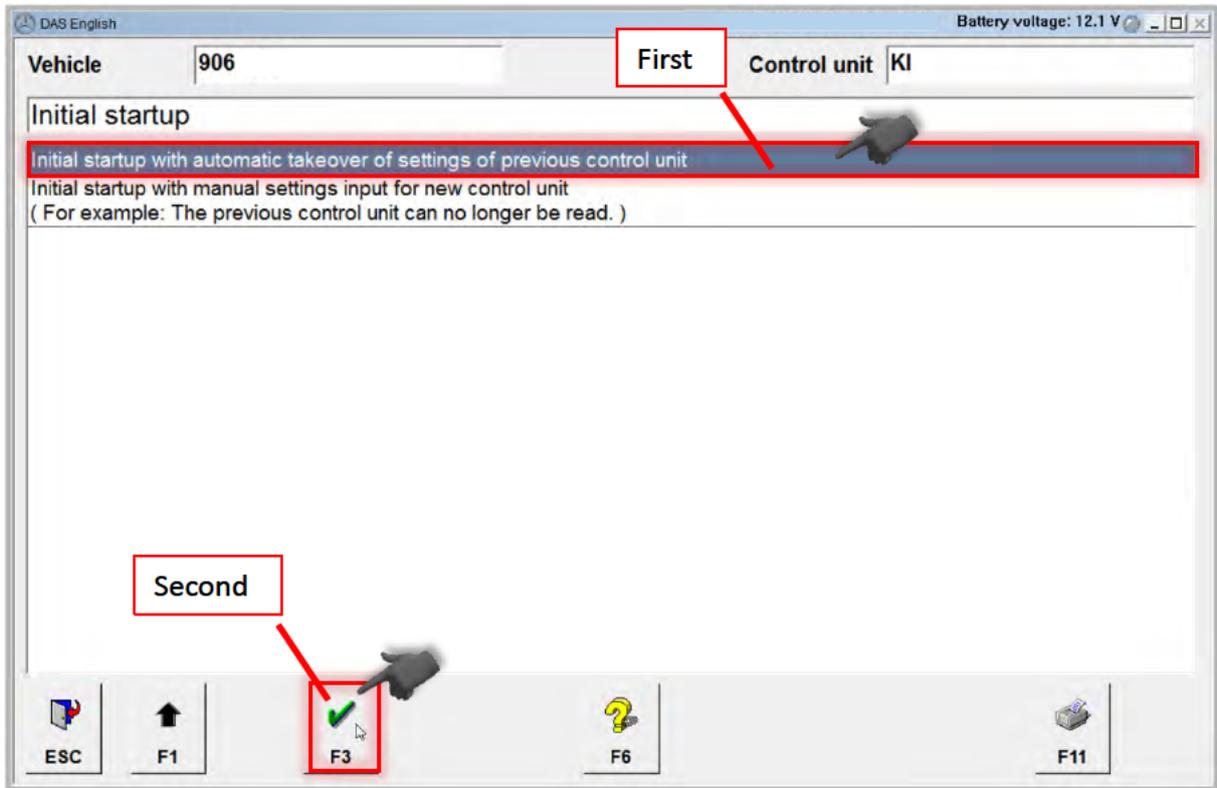
KI Instrument cluster

- Control unit version
- Fault codes and events
- Actual values
- Actuations
- Initial startup**
- Control unit adaptations
- ASSYST Active Service System
- Control unit log
- Diagnosis to plant specifications

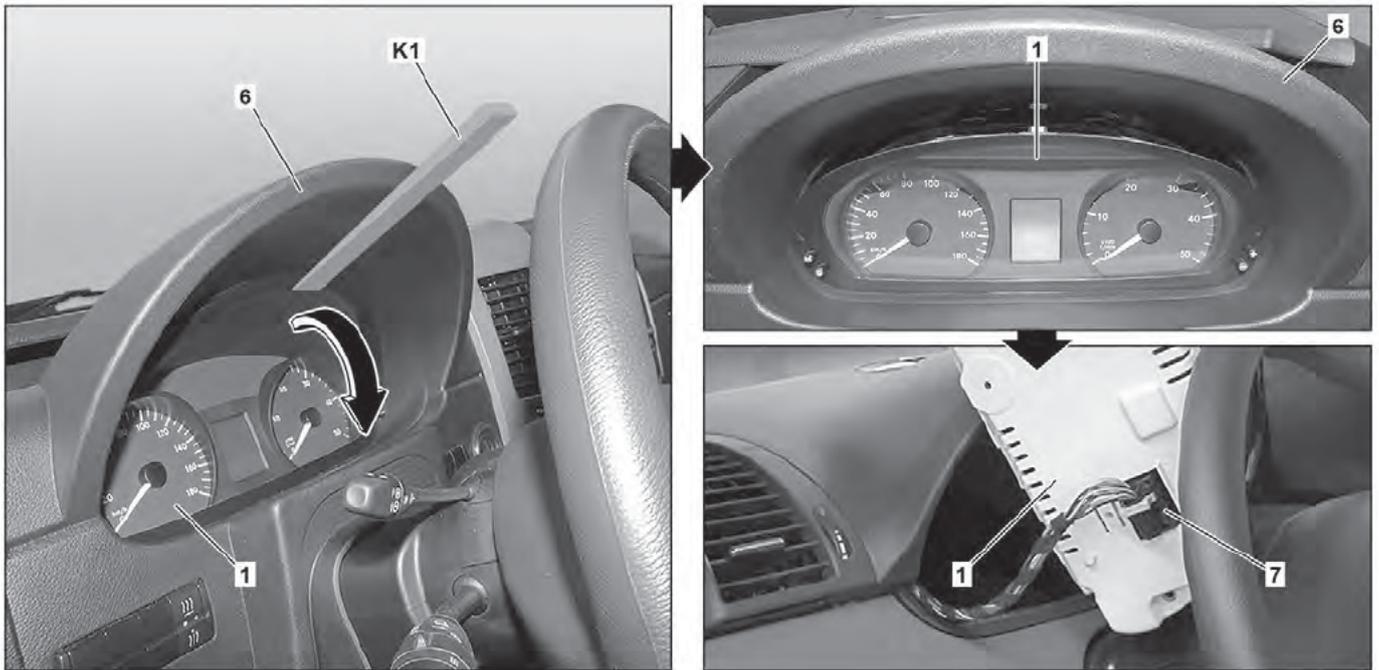
ESC F1 **F3** F6 F11

First (points to Initial startup menu item)

Second (points to F3 button)

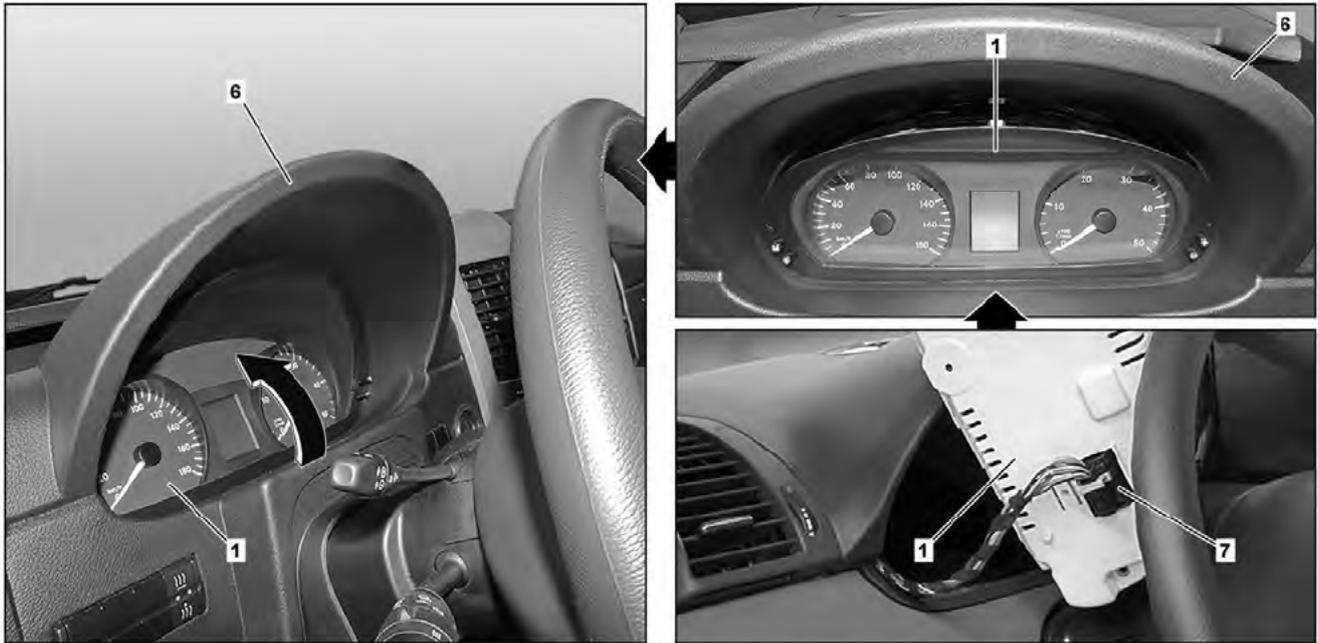


Removal



- 11 Using the steering column adjustment, lower the steering wheel to its lowest possible setting.
- 12 Insert the plastic wedge (K1) between the top of the instrument cluster (1) and the dashboard (6), as shown.
- 13 Swivel the top of the instrument cluster (1) towards the steering wheel.
- 14 Hold the instrument cluster (1) at the top, carefully swivel out upwards at the dashboard and move it out until the electrical plug connection (7) becomes accessible.
 -  Swivel out the instrument cluster (1) carefully. Otherwise damage could occur.
- 15 Disconnect the electrical connection (7) and remove the instrument cluster (1).
 -  Return the instrument cluster (1) to the originating parts department.



Installation

- 16 Put the new instrument cluster (1) in position and connect the electrical plug connection (7).



A 906 900 81 03 (mph)

- 17 Carefully insert the instrument cluster (1) into the dashboard (6).



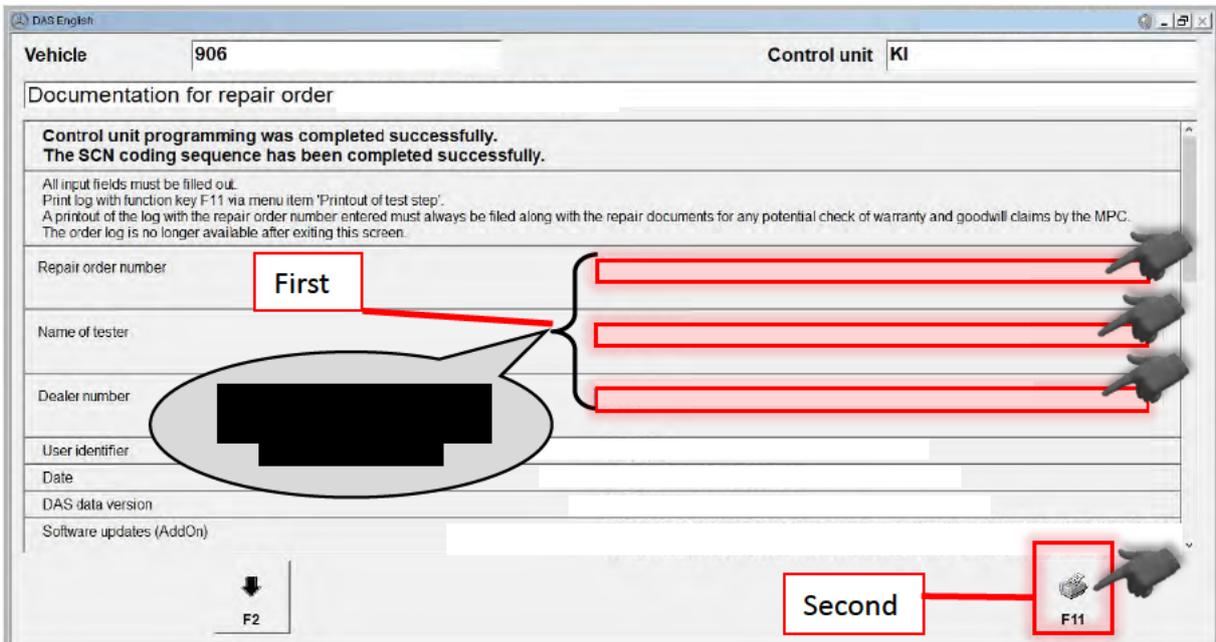
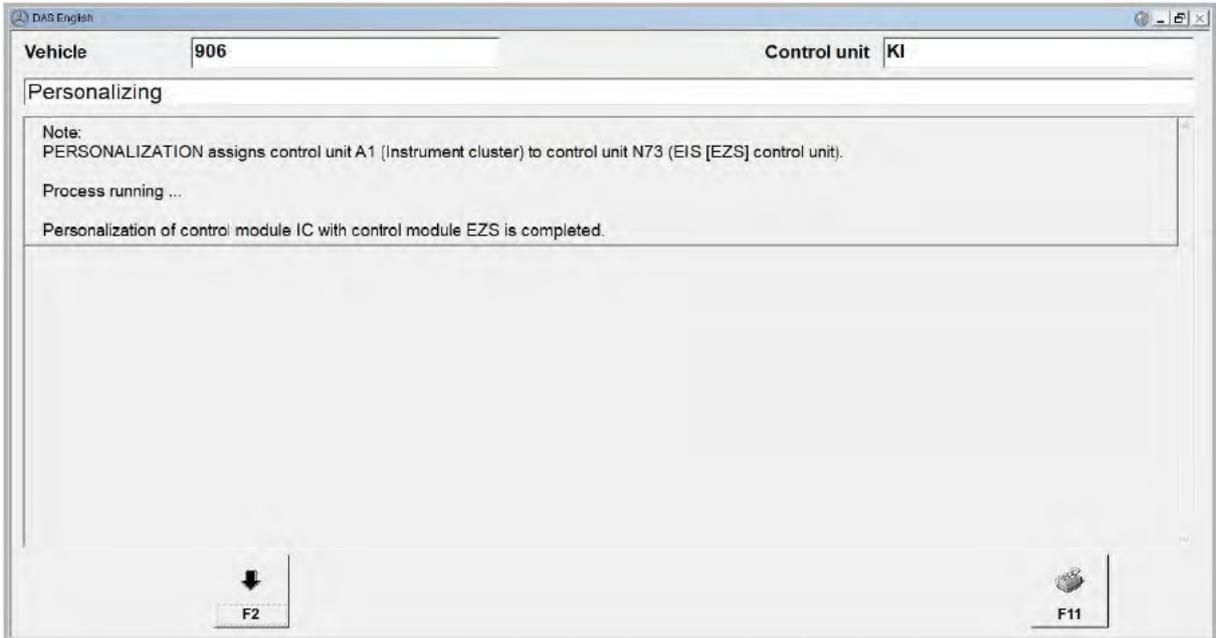
Insert the instrument cluster (1) carefully.
Otherwise damage could occur.

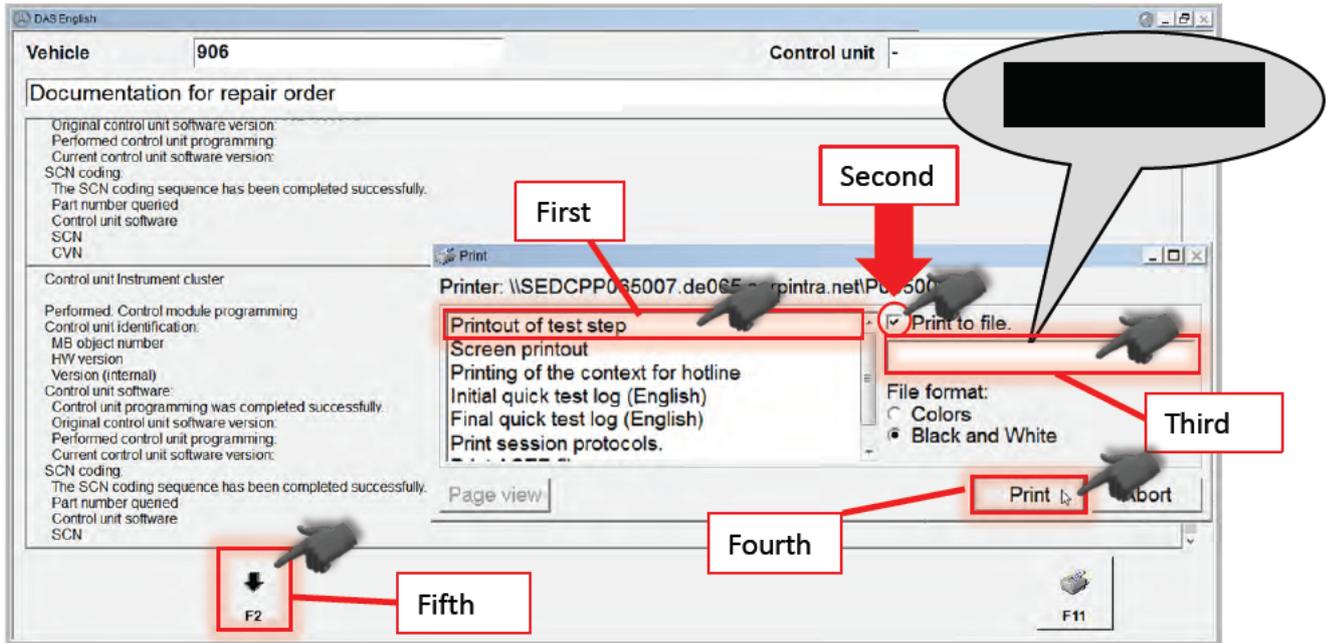
- 18 Complete the Initial startup of the instrument cluster (1).



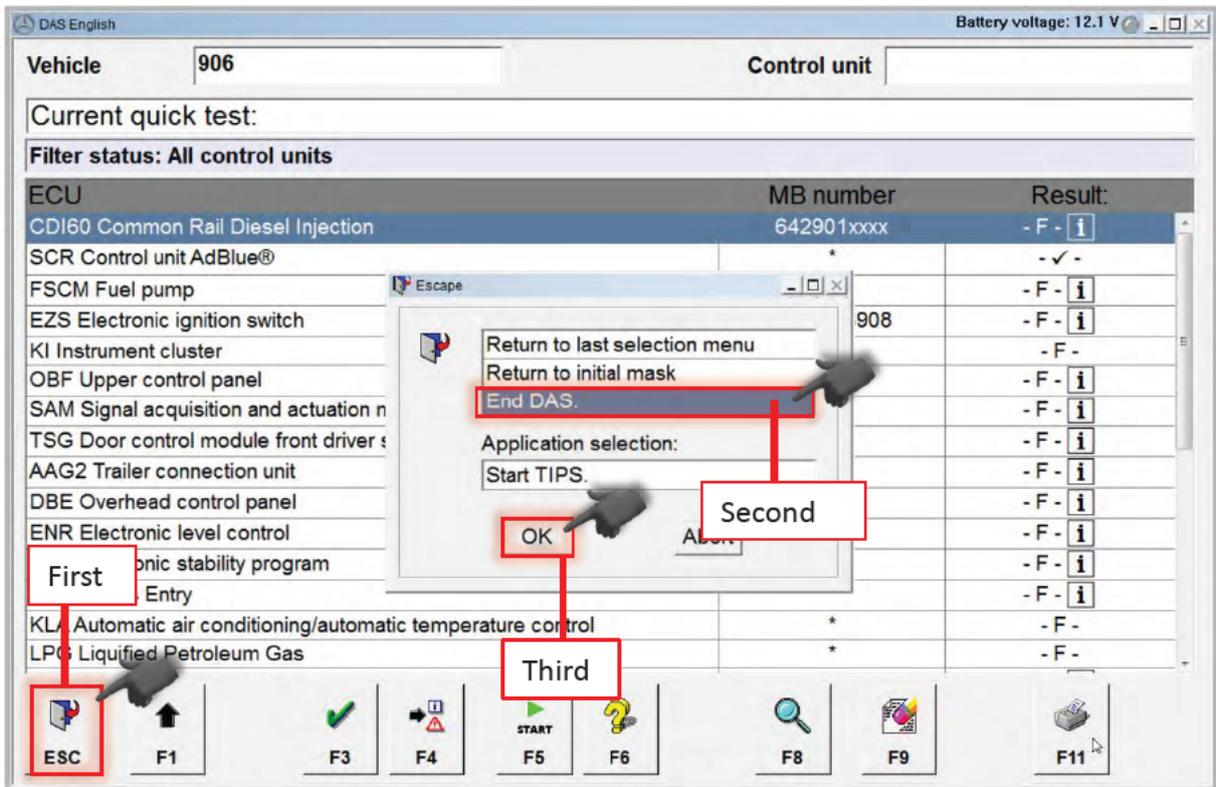
The operation steps must be performed exactly as per the diagnostic system.

- 19 Move the steering wheel back to its original position.





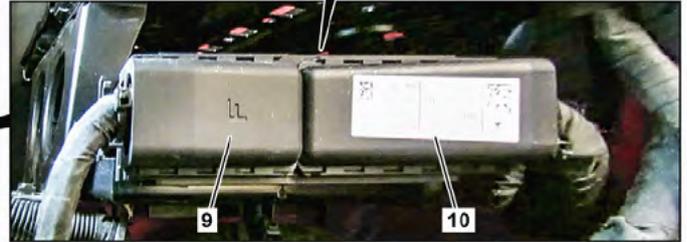
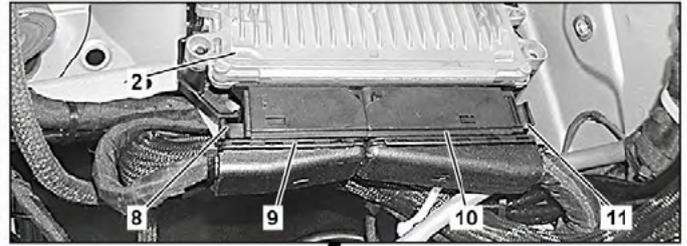
20 End the XENTRY session. (DAS)



21 Switch off the ignition.

22 Disconnect the diagnostic system.

23 Disconnect battery charger.



- 24 Unlock the closing levers (8,11) by pulling and disconnect the electrical plug connections (9, 10) on the control unit CDI (2).

- 25 Connect the electrical plug connections (9, 10) on the control unit CDI (2) and lock the closing levers (8, 11).

Removal of the old components

- 26 Raise the vehicle.



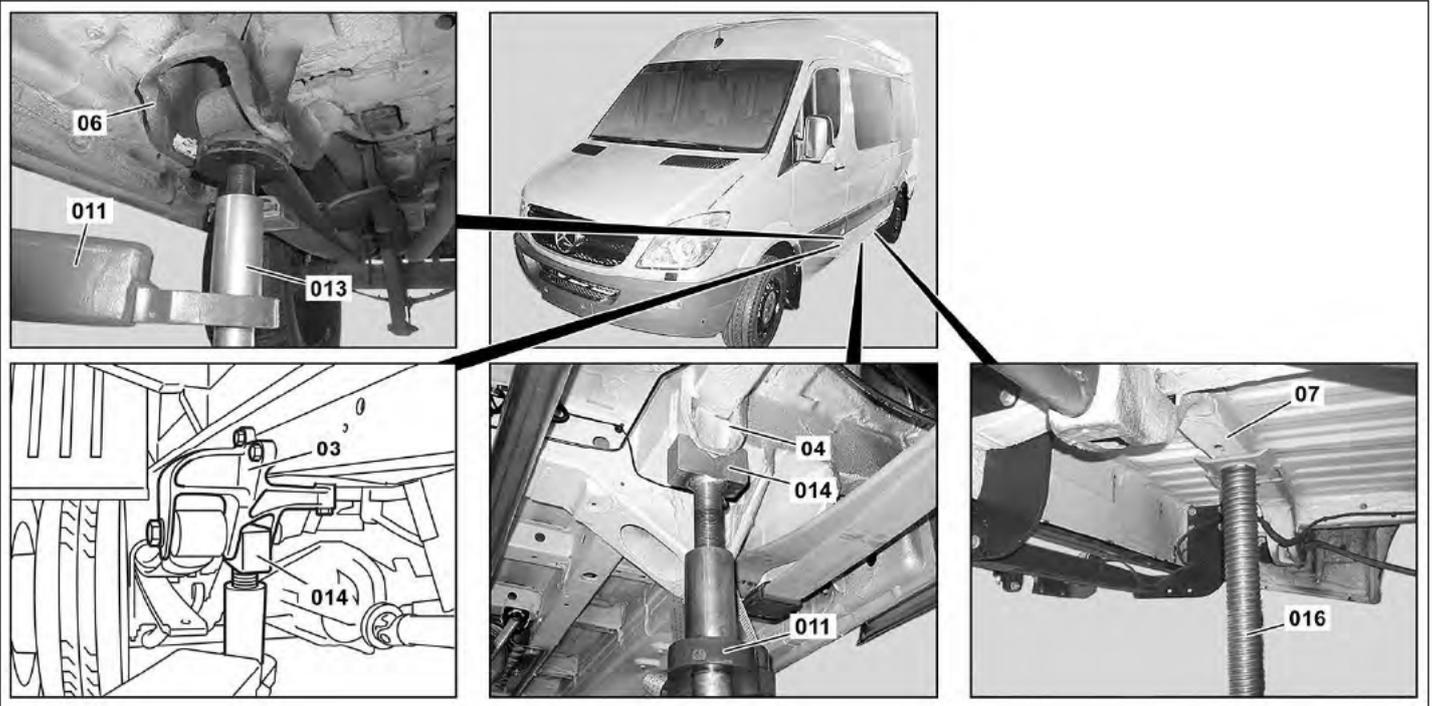
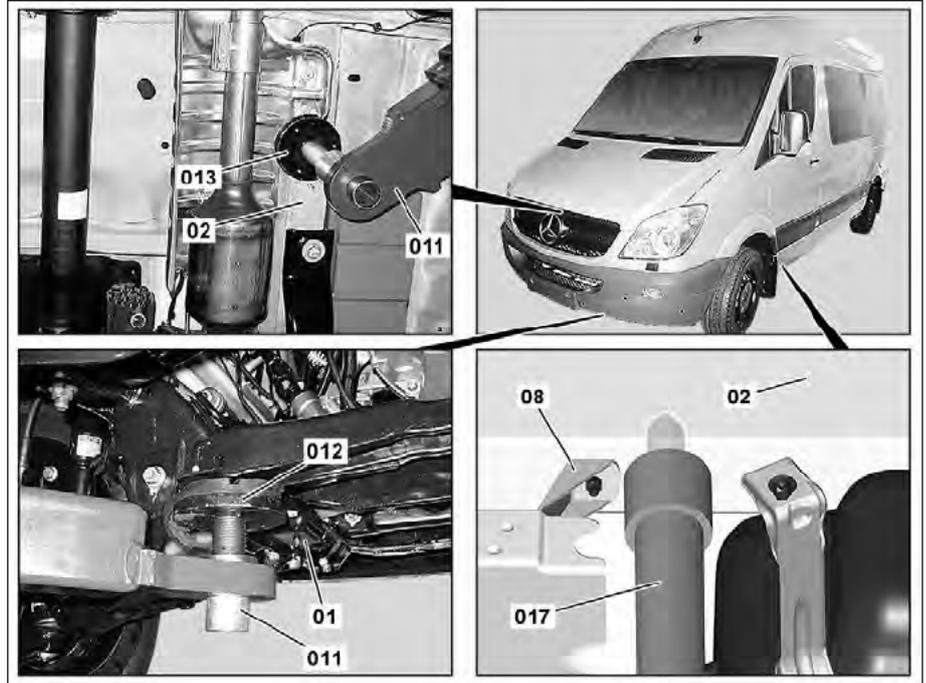
A description of the lift points follows on the next pages.

Raise the vehicle on the hydraulic lift


Read the operating instructions for the hydraulic lift.

Lift mounting points on the vehicle in the area of the front axle

- 01 spring clamp plate
- 02 longitudinal member
- 08 bracket
- 011 arm of hydraulic lift
- 012 support plate
- 013 long support plate
- 017 support drift


Lift mounting points on the vehicle in the area of the rear axle

- | | | |
|------------------------------|---------------------------|-------------|
| 03 front rear spring bracket | 07 crossmember | 014 v-block |
| 04 longitudinal member | 011 arm of hydraulic lift | 016 prop |
| 06 front rear spring bracket | 013 long support plate | |



Picture reference	Pick-up point	Information
03	Support at rear to front rear spring bracket.	
04	Rear support at longitudinal member.	- If possible, always support at rear Install at longitudinal member (4).
06	Install on front rear spring bracket.	
012	Support plate.	- For front support to spring clamp plate (1). Unscrew support plate (012) at right and left an equal distance. - In vehicles with vehicle lift support point at integral carrier (5).
013	Long support plate.	- For front support at longitudinal member (2) and support at front rear spring bracket (6). Can be used alternatively to front support to spring clamp plate (1). Pull out long support plates (013) at right and left an equal distance. - In vehicles without a vehicle lift support point at the integral carrier (5) in the vicinity of the inner mounts of the semi-trailing arms.
014	V-block	- For rear support at front rear spring bracket (3) and rear support at longitudinal member (4). Pull v-block (014) at right and left rear out an equal distance.
016	Ram	- Vehicles with heavy bodies and panel vans/crewbuses with a long wheelbase at the crossmember (7) should be supported with a prop (016).
017	Support drift	- With soundproofing Ensure that support drift (017) does not make contact with bracket (8) of rear soundproofing. If necessary, loosen bracket (8), push towards the front as far as possible and retighten it. Otherwise the brackets (8) of the rear soundproofing and the longitudinal members may be damaged. - For front support to longitudinal member (2). Unscrew support drift (017) at right and left an equal distance.

Secure vehicle on lift.

Heavily loaded vehicles, vehicles with a heavy body and vehicles with unfavorable load distribution must generally be secured.

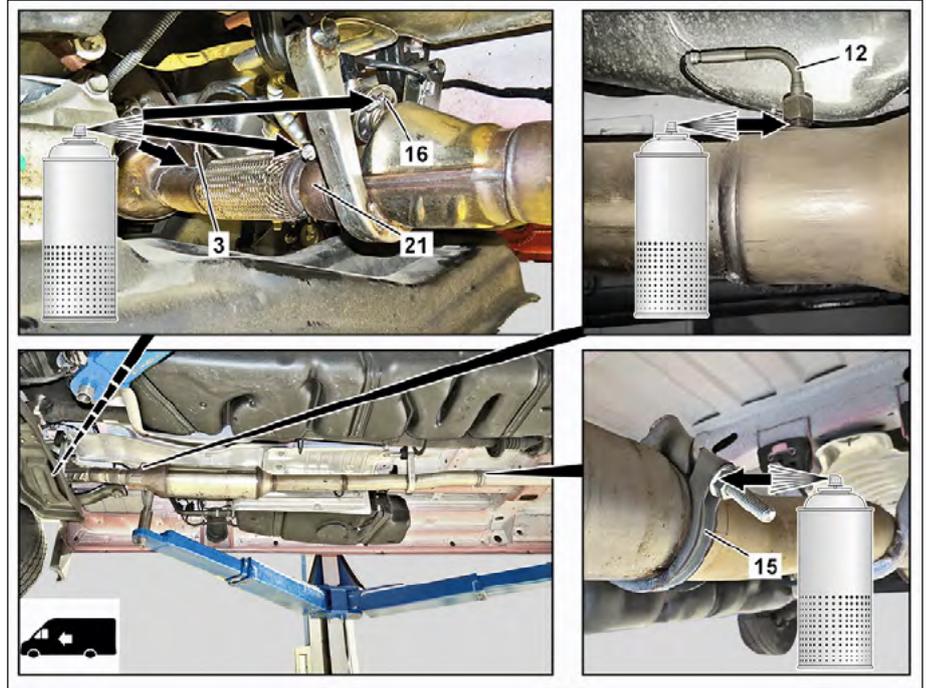
Otherwise these may fall.

27

Spray penetrating oil on the threads of the NO_x sensor upstream of SCR catalytic converter (3), clamp (16), clamp (21), thread of the exhaust gas temperature sensor (12) and clamp (15), as shown.

 **Exhaust system should be cold in order to carry out the next steps. This avoids injuries.**

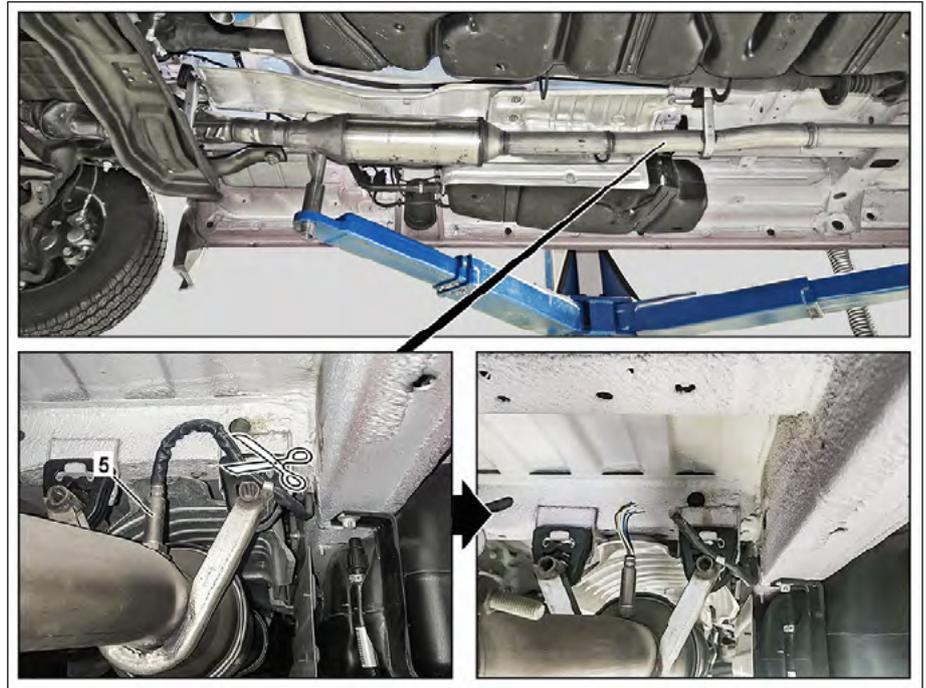
 **Observe the wait period and details provided by the manufacturer of the penetrating oil!**



28

The NO_x sensor harness downstream stream of the SCR catalytic converter (5) should be cut for ease of removal and to ensure it is not reused.

 The NO_x sensor downstream of the SCR catalytic converter (5) is to remain in the SCR catalytic converter and to be **returned** together.



29 Loosen the clamp (15) at tailpipe (13) connection.

30 Remove tailpipe (13).

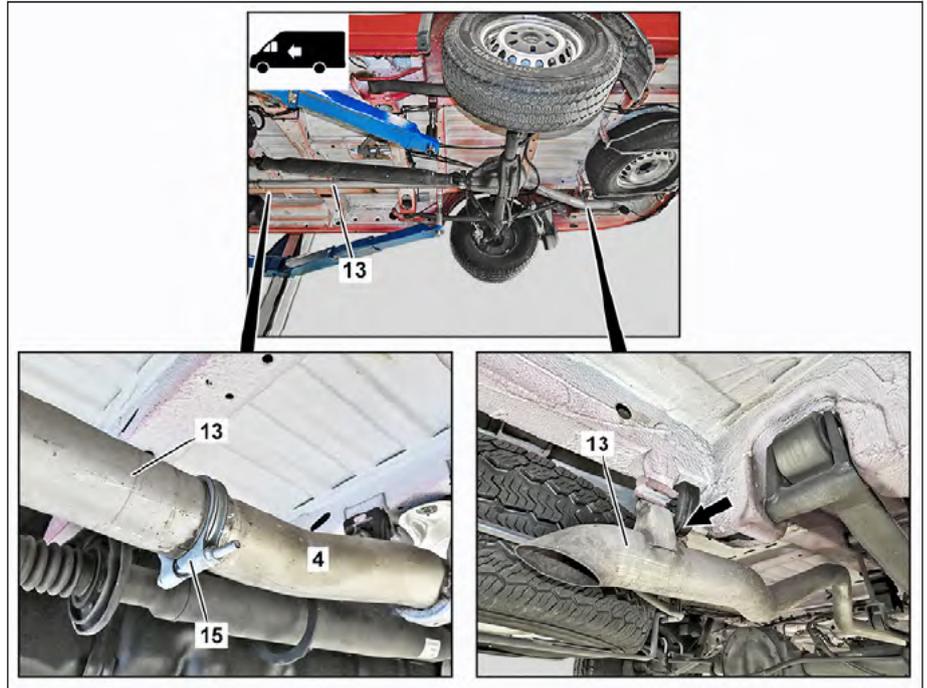


To do so, remove tailpipe (13) from decoupling element (arrow).

31 Remove and dispose the clamp (15).



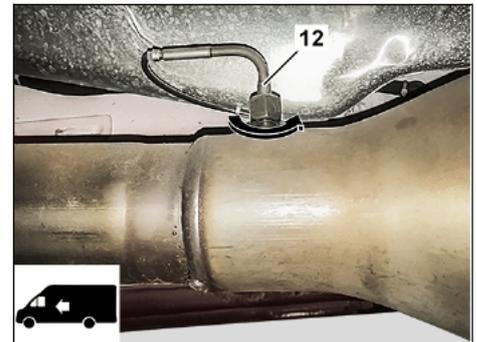
Observe state-specific regulations for disposal.

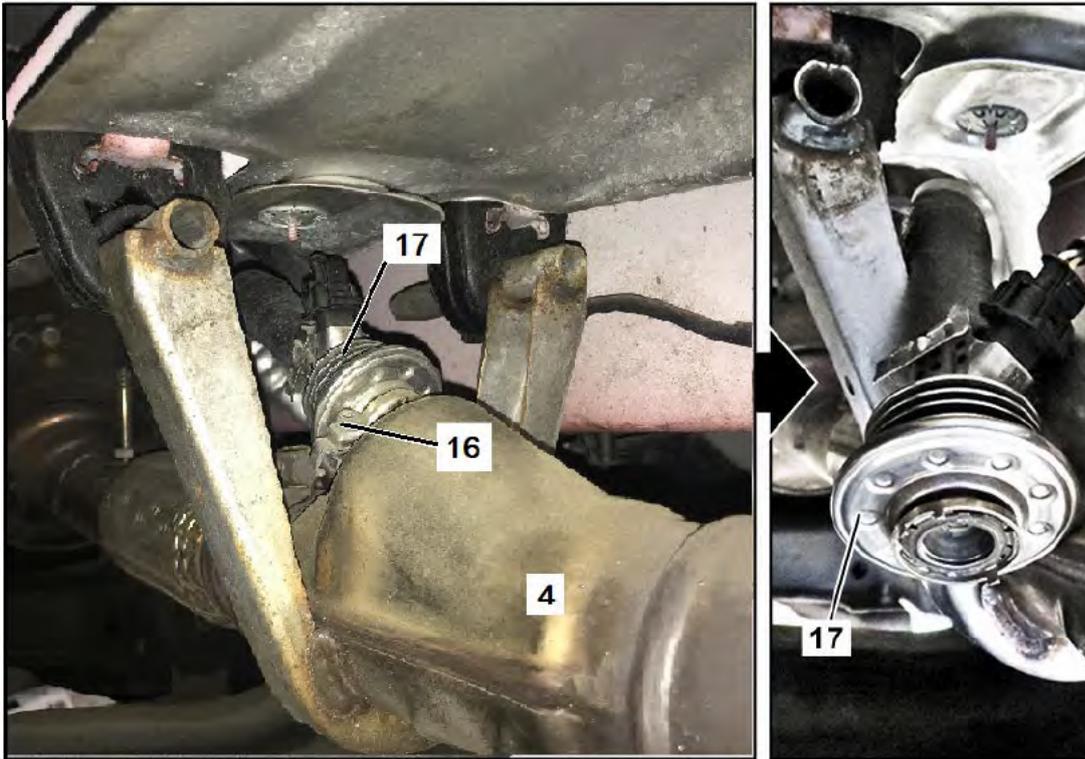


32 Remove exhaust gas temperature sensor (12) upstream of the SCR catalytic converter.



This is done by unscrewing the union nut on the exhaust gas temperature sensor (12) in a counter-clockwise direction. Position the exhaust gas temperature sensor (12) outside the working area.





33 Remove the screw on the clamp (16) of the AdBlue® injection nozzle (17).

34 Remove and dispose clamp (16) at injection nozzle with a suitable tool and position the AdBlue® injection nozzle (17) outside the working area.



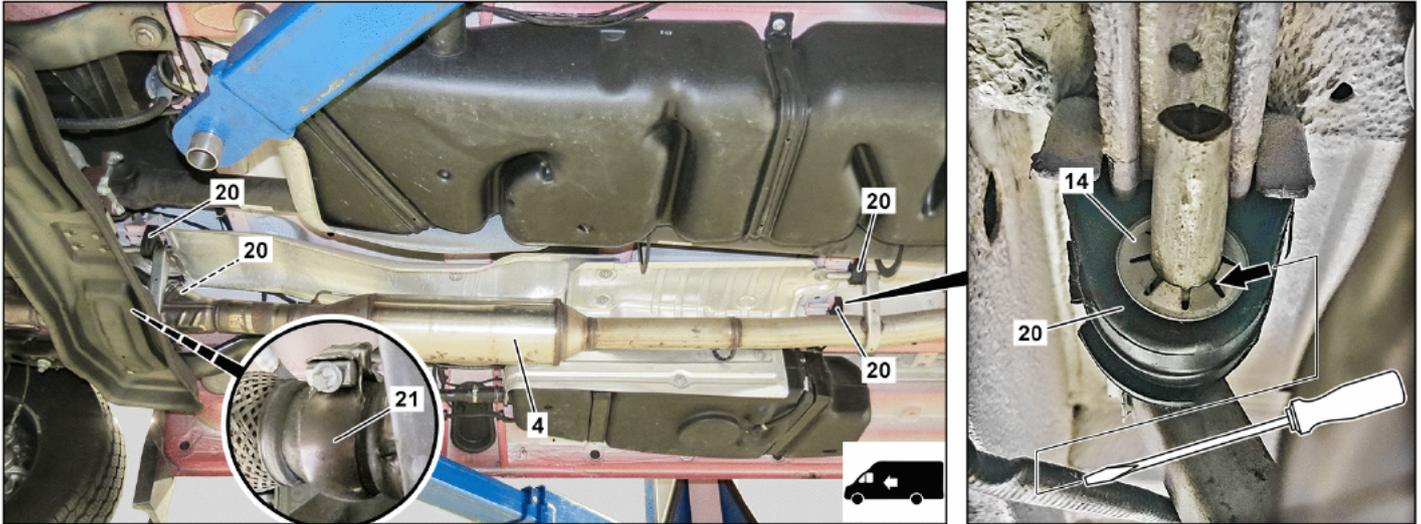
Observe state-specific regulations for disposal.

35 Remove and dispose the profile seal (18) on the AdBlue® injection nozzle (17).



Observe state-specific regulations for disposal.





- 36 Remove and dispose the spring washer (14) on the holding bracket of the SCR catalytic converter (4).



This is done by bending up the individual locking fins with a screwdriver.



Observe state-specific regulations for disposal.

- 37 Loosen the clamp (21) between the flex pipe and the SCR catalytic converter (4).

- 38 Remove the SCR catalytic converter (4).



To do this, remove the SCR catalytic converter (4) from the decoupling elements (20).

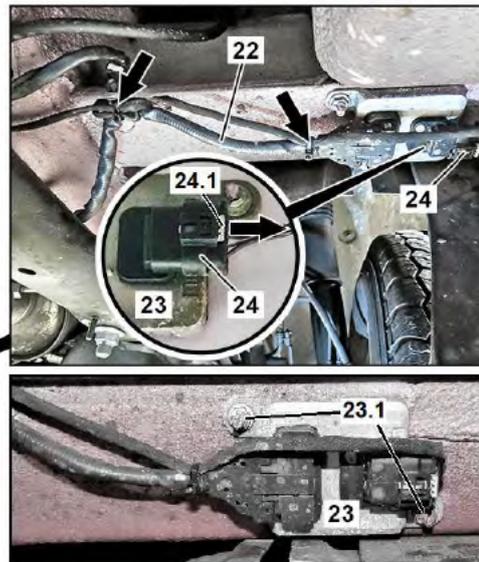


Return the SCR catalytic converter (4) to the originating parts department.

- 39 Remove and dispose the clamp (21).



Observe state-specific regulations for disposal.



- 40 Disconnect the electrical plug connection (24) NO_x sensor control unit upstream of the SCR catalytic converter (23).



To do this, unlock the gray retaining tab (24.1) by moving towards the cable harness.

41 Remove the NO_x sensor control unit upstream of the SCR catalytic converter (23) from the frame.



To do this, remove and dispose nuts (23.1).

42 Remove and dispose the remaining zip ties and retaining clips (arrows) from harness (22) of the NO_x sensor control unit upstream of the SCR catalytic converter (23).

43 Remove and dispose NO_x sensor upstream of SCR catalytic converter (3).

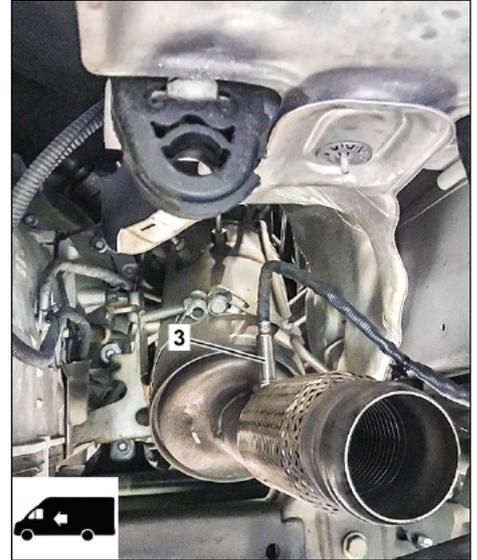


The control unit for the NO_x sensor and the NO_x sensor upstream of the SCR catalytic converter (3) are a single unit.



Observe state-specific regulations for disposal.

44 Clean the threads and the contact surfaces on the exhaust pipe.



45 Remove the heat shield (25).

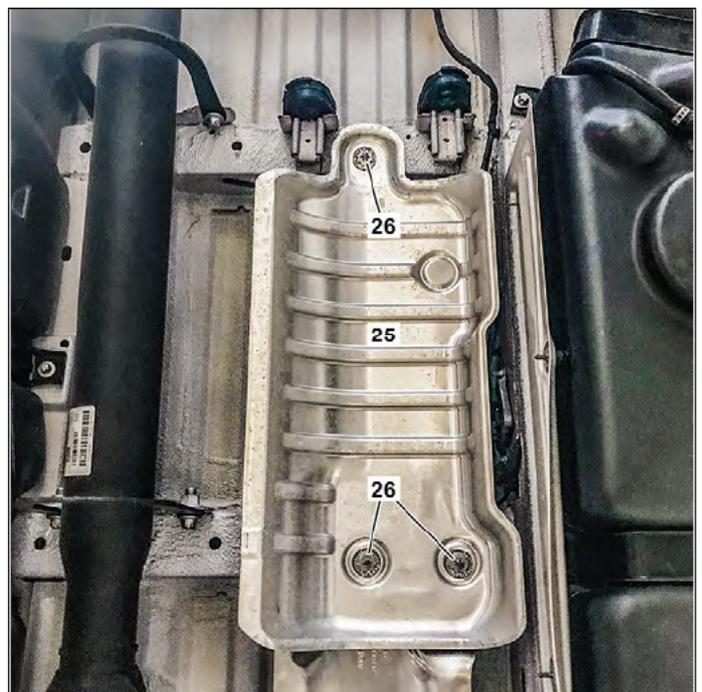


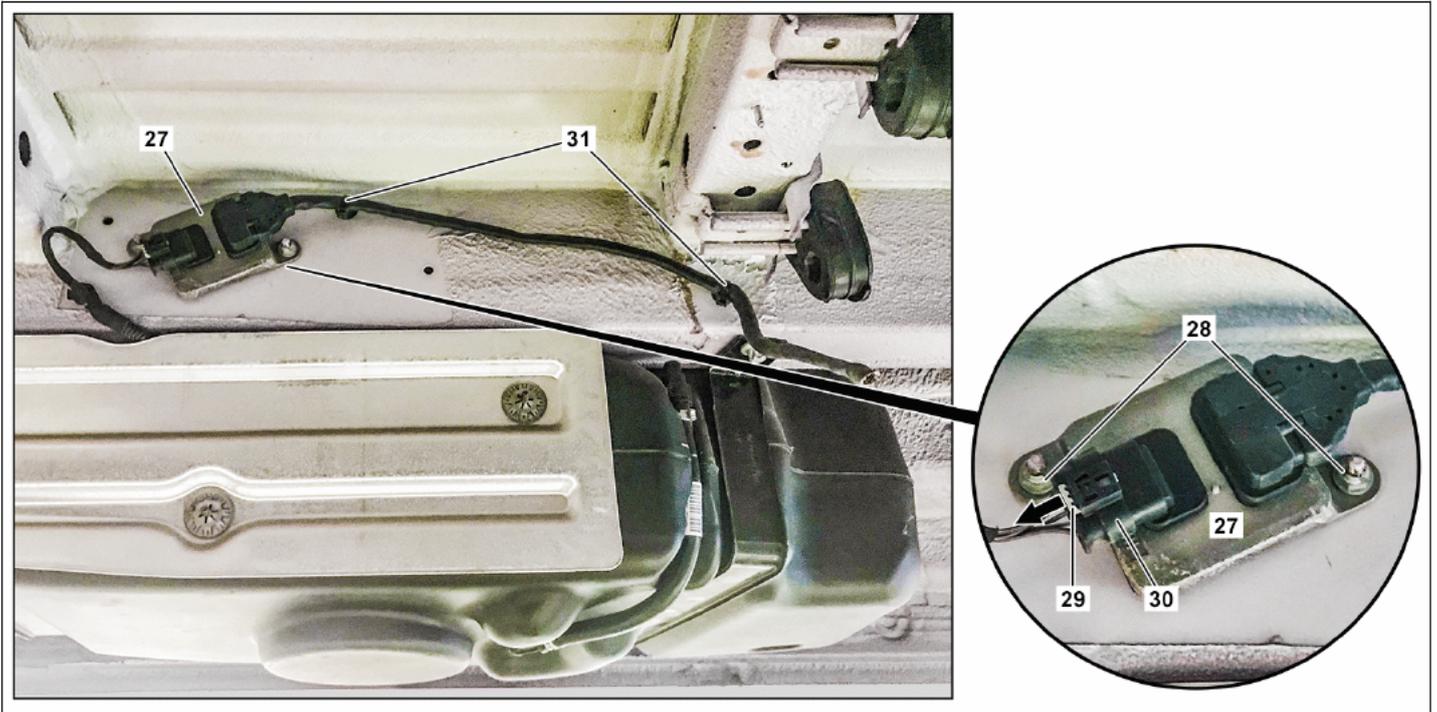
This is done by bending up the individual locking fins with a screwdriver and unscrew the clamping nuts (26) in a counter-clockwise direction with a screwdriver.

46 Dispose the clamping nuts (26).



Observe state-specific regulations for disposal.





- 47 Disconnect the electrical plug connection (30) at the downstream NO_x sensor control unit (27).



To do this unlock the gray retaining tab (29) by moving in the direction of the arrow.

- 48 Remove and dispose the downstream NO_x sensor control unit (27).



To do this, remove and dispose the nut fasteners (28) and retaining clips (31).

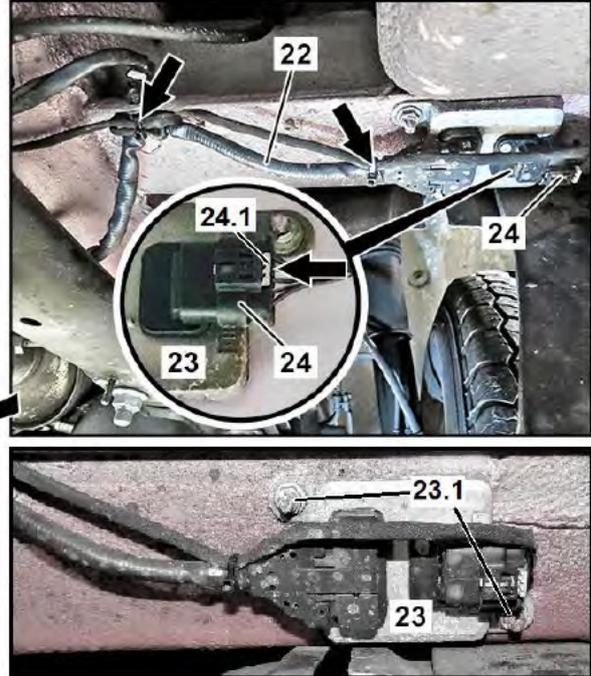


Observe state-specific regulations for disposal.

Installation



Completely remove the adhesive labels that are on the new exhaust system and its components and leave no residue.



- 49 Install new NO_x sensor upstream of SCR catalytic converter (3).



NO_x sensor upstream of SCR catalytic converter: Torque to **60 Nm / 44.3 ft·lb**

A 000 905 85 11 80 (included in package A 642 905 20 00 85)

- 50 Install the NO_x sensor control unit upstream of the SCR catalytic converter (23) on the frame.



Use new fasteners (23.1). NO_x sensor control unit: Torque to **9 Nm / 6.6 ft·lb**
N 000000 003477

- 51 Connect the electrical plug connection (24) and lock the retaining tab (24.1).



Push the gray retaining tab (24.1) in the direction of the arrow to lock.

- 52 Secure the harness (22) with a cable ties (arrows), as shown.



A 002 997 24 90 64 (1x)
A 007 997 56 90 (2x)

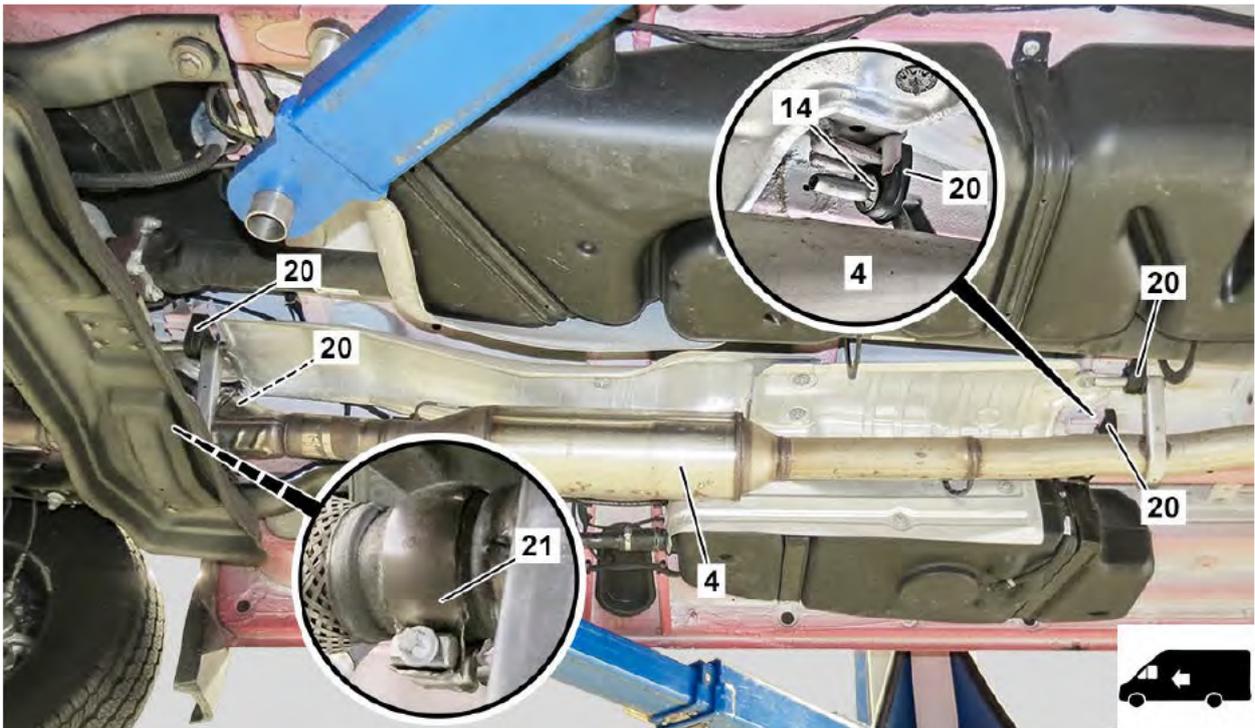
- 53 Install a new profile seal (18) on the AdBlue® injection nozzle (17).



Clean the sealing surface of the AdBlue® injection nozzle (17) before installation. If excess crystallization of AdBlue® is present, use water and a non-abrasive cloth to clean the AdBlue® injection nozzle (17).



A 207 492 00 00



- 54 Position the new clamp (21) on the exhaust pipe.



A 000 490 13 41

- 55 Install new SCR catalytic converter (4).



Make sure that the SCR catalytic converter is correctly seated in the decoupling elements (20).



A 906 490 08 83 80

- 56 Tighten the new clamp (21).



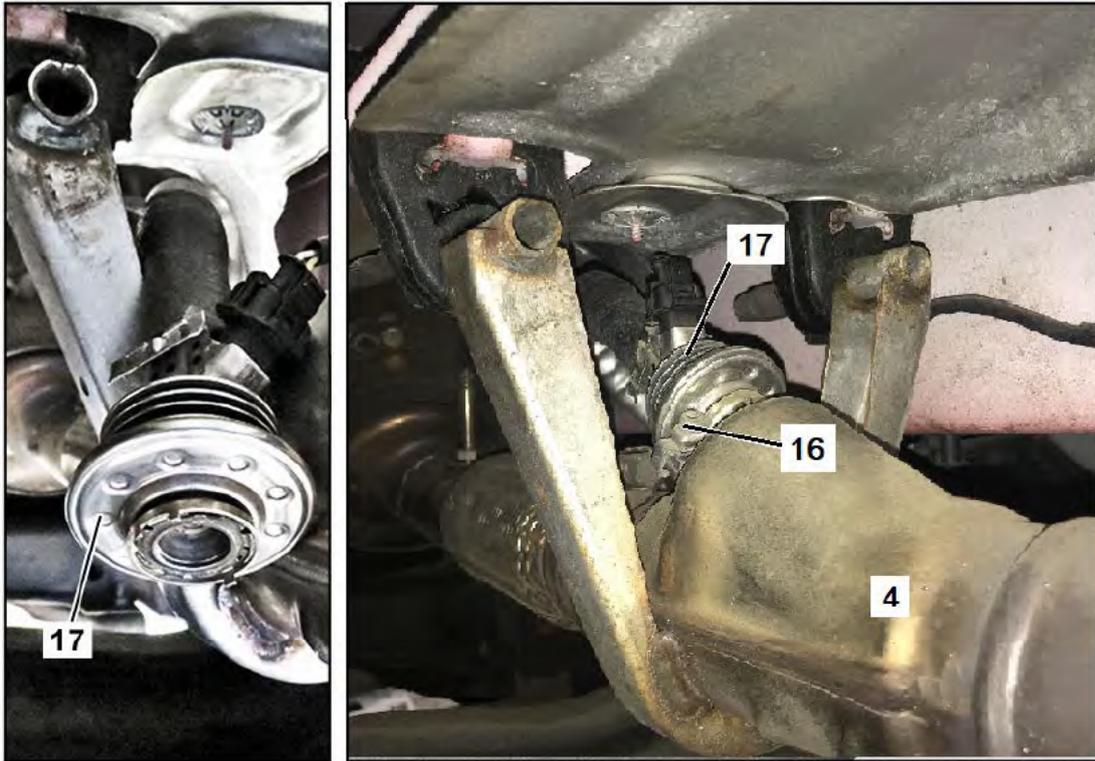
Screw connection point needs to be pointed downward.

Clamp diesel particle filter on SCR catalytic converter: Torque to 35 Nm / 25.8 ft·lb

- 57 Install new spring nut (14) on the holding bracket of SCR catalytic converter (4).



A 123 994 13 45



- 58 Install the AdBlue® injection nozzle (17).



Position the new profile clamp (16) on the SCR catalytic converter (4) first.



A 000 995 11 33

- 59 Install the screw on the new profile clamp (16) on the AdBlue® injection nozzle (17).



Screw: Torque to 5 Nm / 3.7 ft·lb

- 60 Install the exhaust gas temperature sensor (12) upstream of the SCR catalytic converter.

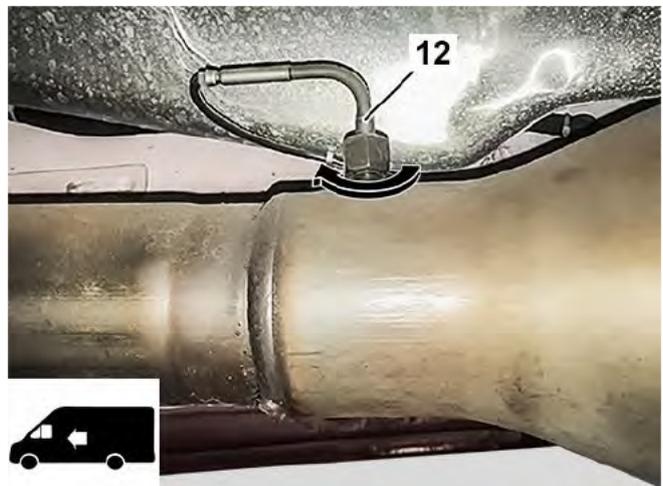


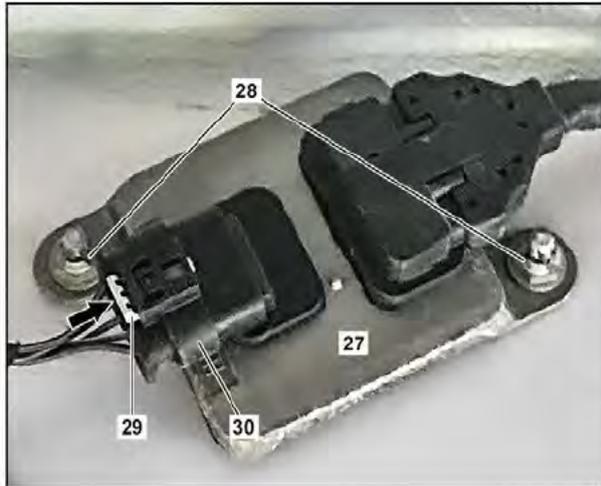
Apply nickel anti-seize paste to threads only. Avoid contact to the sensor.

A 000 989 76 51 (bulk paste; can be applied to multiple vans)



Temperature sensor: Torque to 45 Nm / 33.2 ft·lb





- 61 Install new NO_x sensor control unit downstream of the SCR catalytic converter (4).
-  Do not route the harness (32) under tension. Otherwise damage could occur.
-  Use new nut fasteners (28). NO_x sensor control unit: Torque to **9 Nm / 6.6 ft·lb**
N 000000 003477
-  **A 000 905 85 11 80** (included in package A 642 905 20 00 85)
- 62 Connect the electrical plug connection (30) and lock the retaining tab (29).
-  Push the gray retaining tab (29) in the direction of the arrow to lock.
- 63 Install the new NO_x sensor downstream of the SCR catalytic converter (5) on the new SCR catalytic converter.
-  NO_x sensor downstream of catalytic converter: Torque to **60 Nm / 44.3 ft·lb**
- 64 Tie back excess length of the harness (32) in a loop. Secure harness (32) with retaining clips (31).
-  **A 002 997 24 90 64 (2x)**



65 Install the heat shield (25).



To do this, place the new clamping nuts (26) centrally on the pin, as shown, and slide up to the stop using a socket wrench.



A 000 994 32 11



66 Install the new mounting tab (34) on the heat shield (25).



A 220 546 18 43

67 Clip the harness (32) into the mounting tab (34).



Do not kink the harness (32) and make sure it is not routed so as to be abraded. This prevents damage.

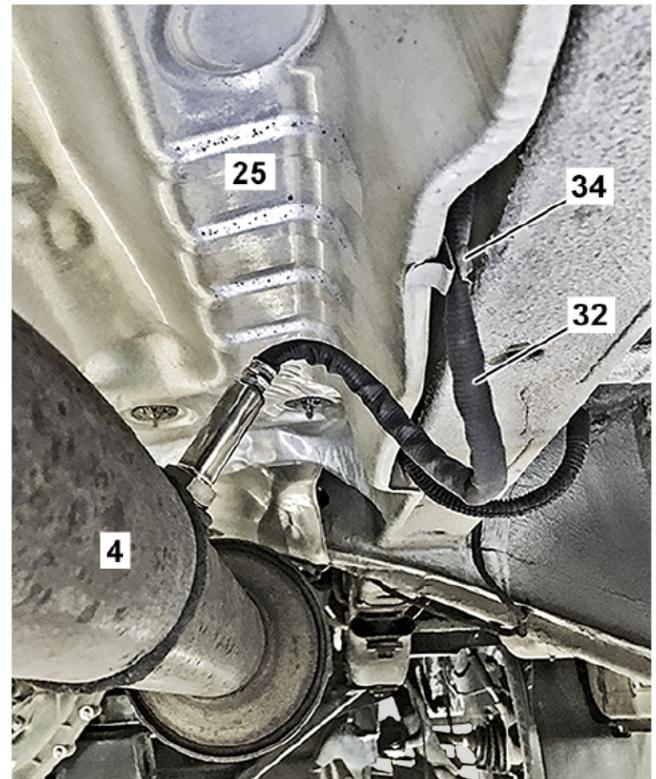


The harness (32) must not touch heat shield (25).

This prevents damage.



The layout schematic of the harness (32) has changed on account of the changed position of the NO_x sensor downstream of the SCR catalytic converter (4).



- 68 Position new clamp (15) on the SCR catalytic converter (4).



A 906 995 02 02

- 69 Install the tailpipe (13) of the exhaust system.

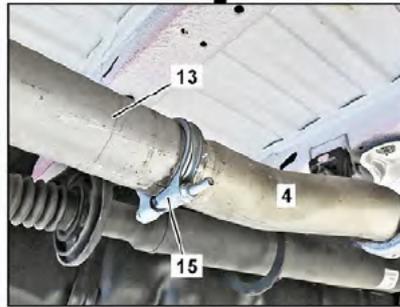
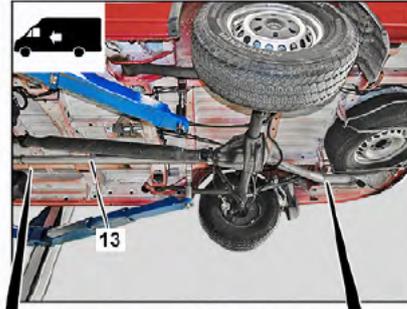
- 70 Align tailpipe (13) and tighten the new clamp (15).



Ensure adequate clearance of the tailpipe to the frame in the area of the rear decoupling element.



Clamp main muffler on endpipe:
Torque to 23 Nm / 17 ft·lb



- 71 Lower the vehicle.

Execution of the special procedure

- 72 Connect the battery charger as indicated.



A sufficient power supply to the vehicle on-board system must be ensured throughout the entire work procedure.

Otherwise any undervoltage that occurs may damage the control units.



Do not connect the battery charger to the auxiliary battery in the engine compartment.

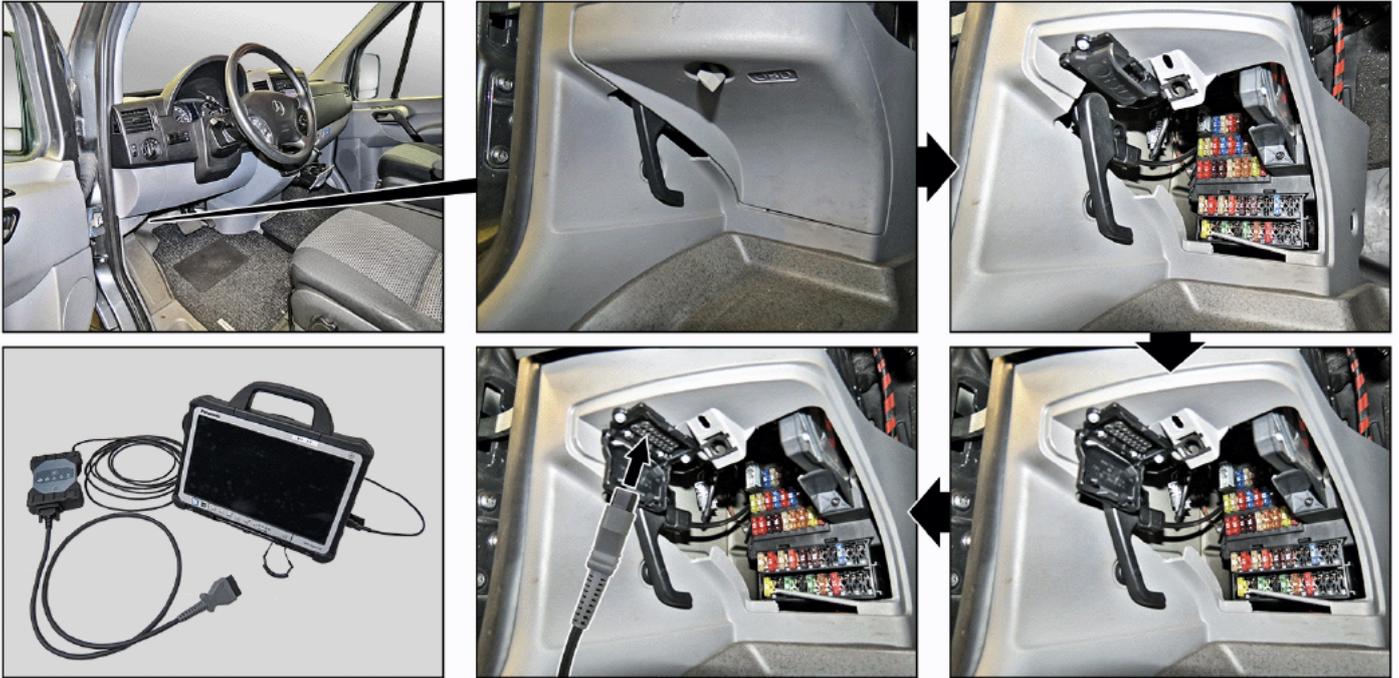


Follow the operating instructions for the battery charger.



Use a Mercedes-Benz recommended battery charger to ensure an adequate voltage supply (min. 12.5 V) is provided for the on-board electrical system battery.





73 Connect the diagnostic system.



The diagnostic system remains connected to the vehicle throughout the work procedure!
Do not disconnect the diagnostic system's online connection.

74 Switch on the ignition.

75 Start the diagnostic system.

76

Run XENTRY and start special procedure of customer service measure.



To do this, select the following menu items: Control units → Drive → CDI60 → Special procedure → Service measure "Exhaust gas after-treatment"



The process starts automatically after starting the special procedure. The operation steps must be performed exactly as per the diagnostic system.

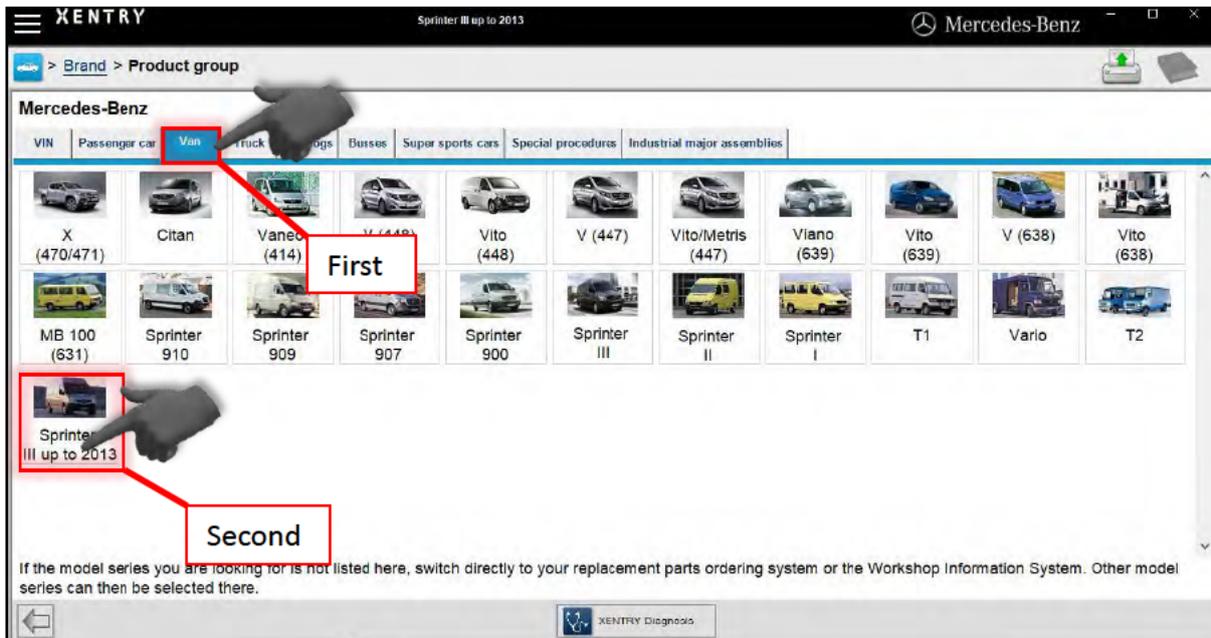
If a fault arises during the special procedure, you need to repeat the procedure. If the fault persists, you need to create a PTSS case or XSF-Ticket including

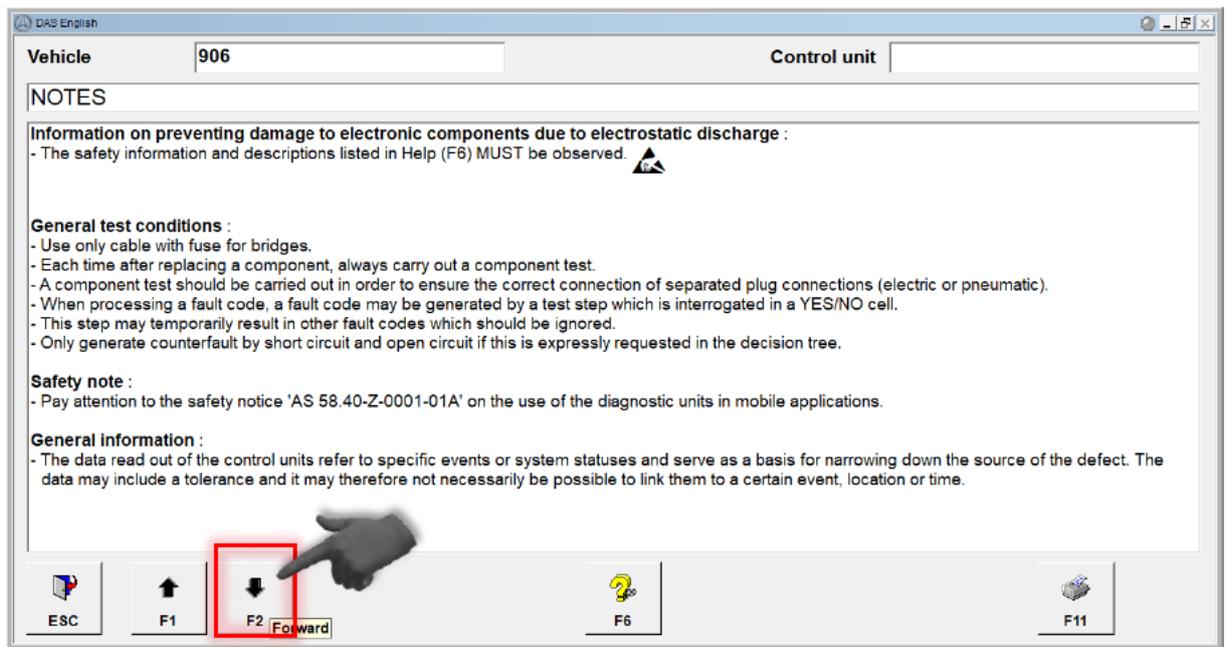
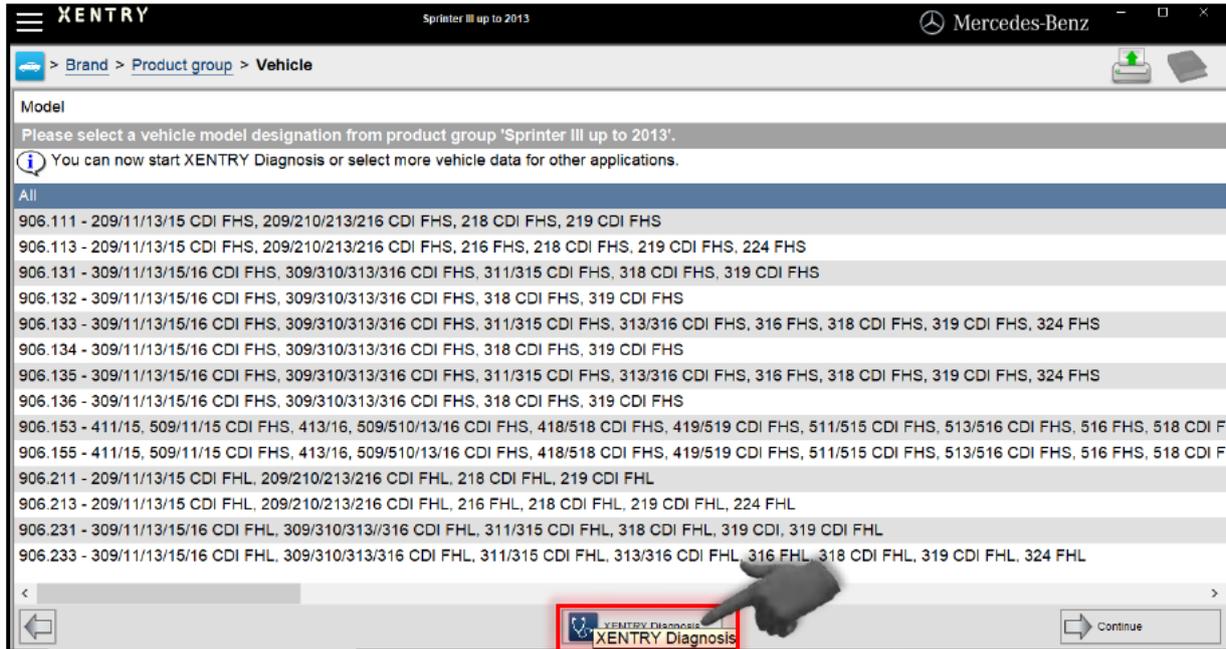
- Initial Quick test
- Current Quick test
- Control unit log
- Result of the "Service measure status check"
- Support Package

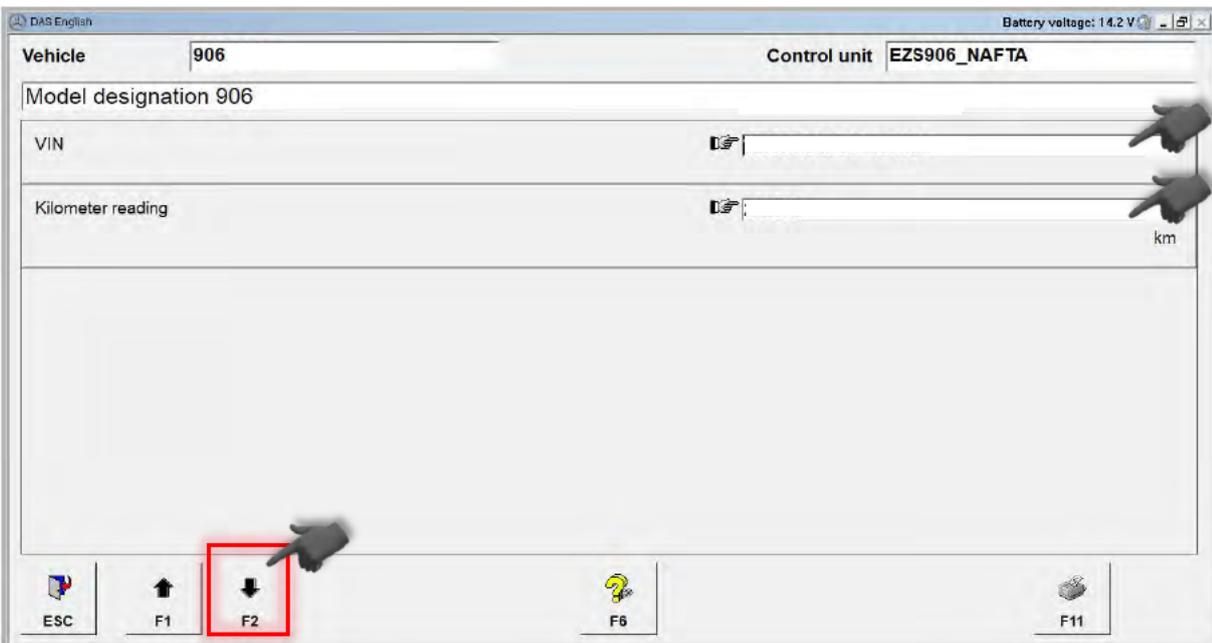
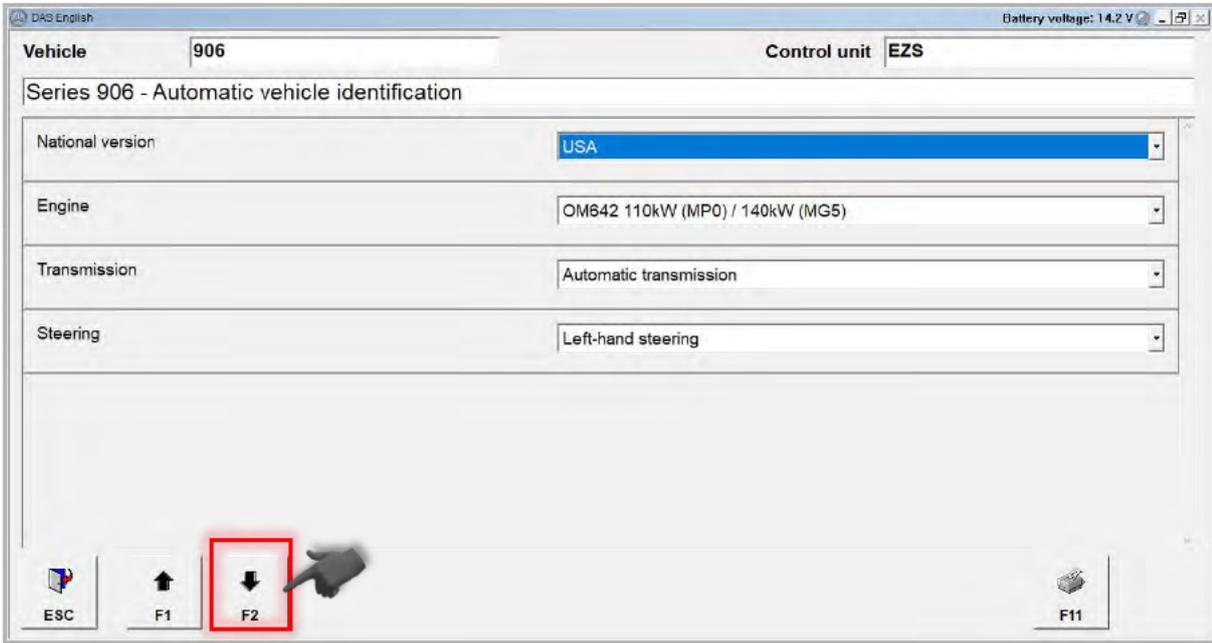
A result report is displayed at the end of the special procedure. This must indicate "OK" for all items. Otherwise, the procedure must be repeated. The vehicle can only be returned to the customer after successfully completing the special procedure. You can check the success of the special procedure using the menu item "Service measure status check".

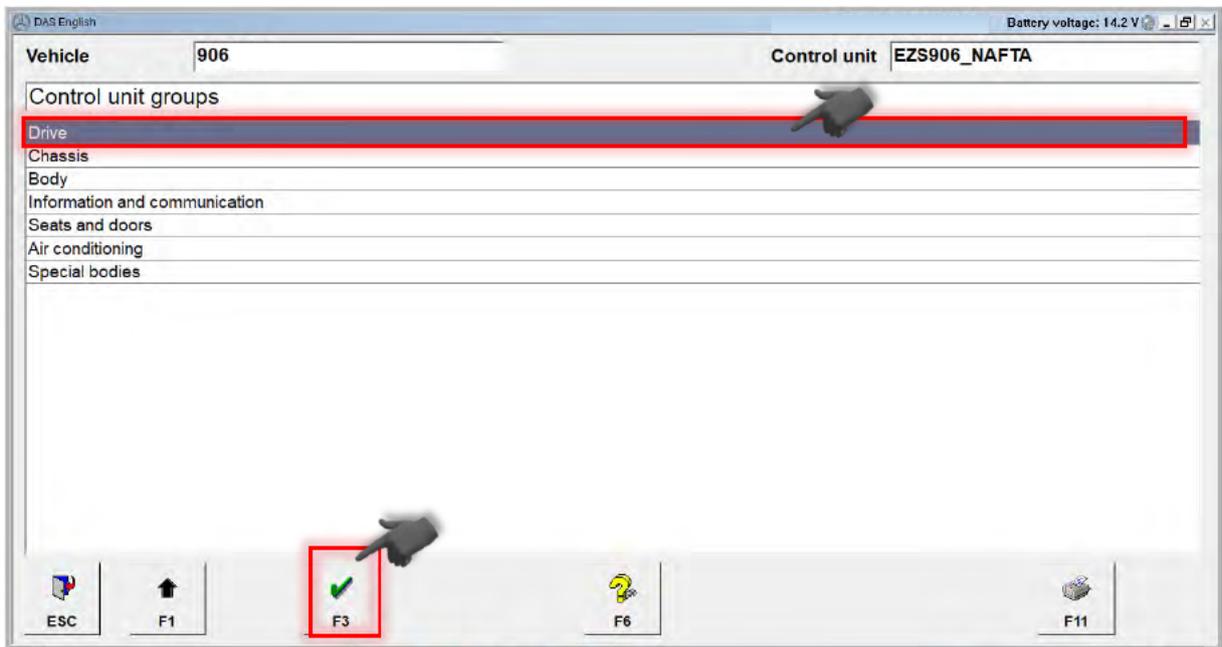
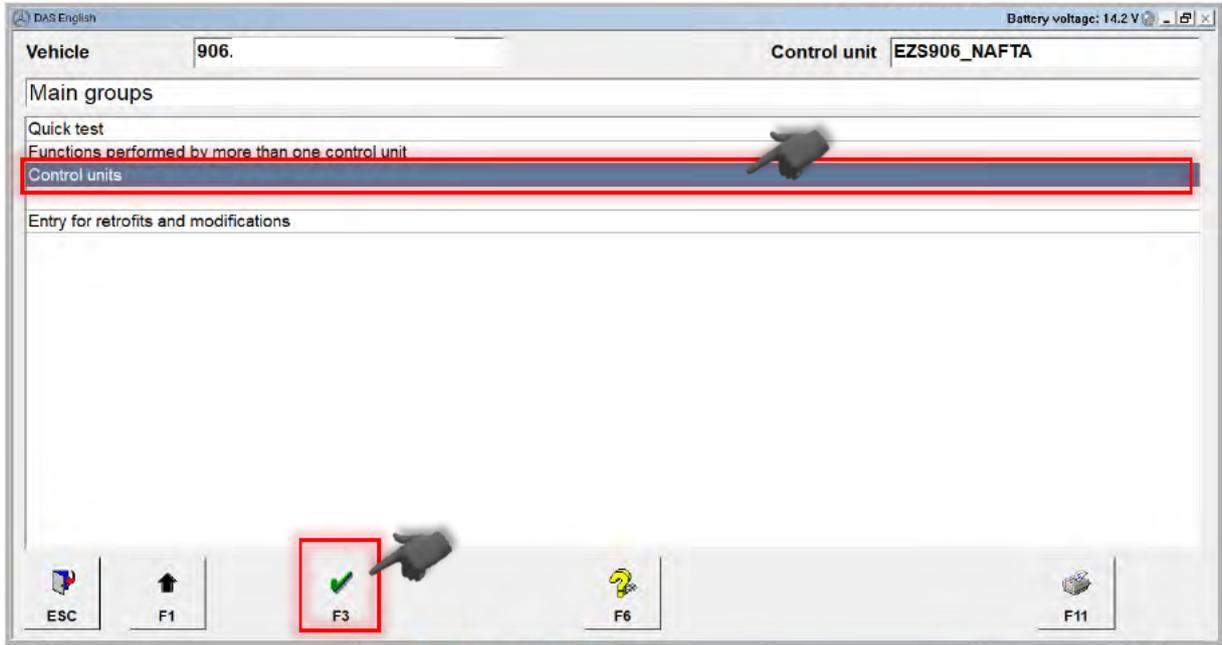


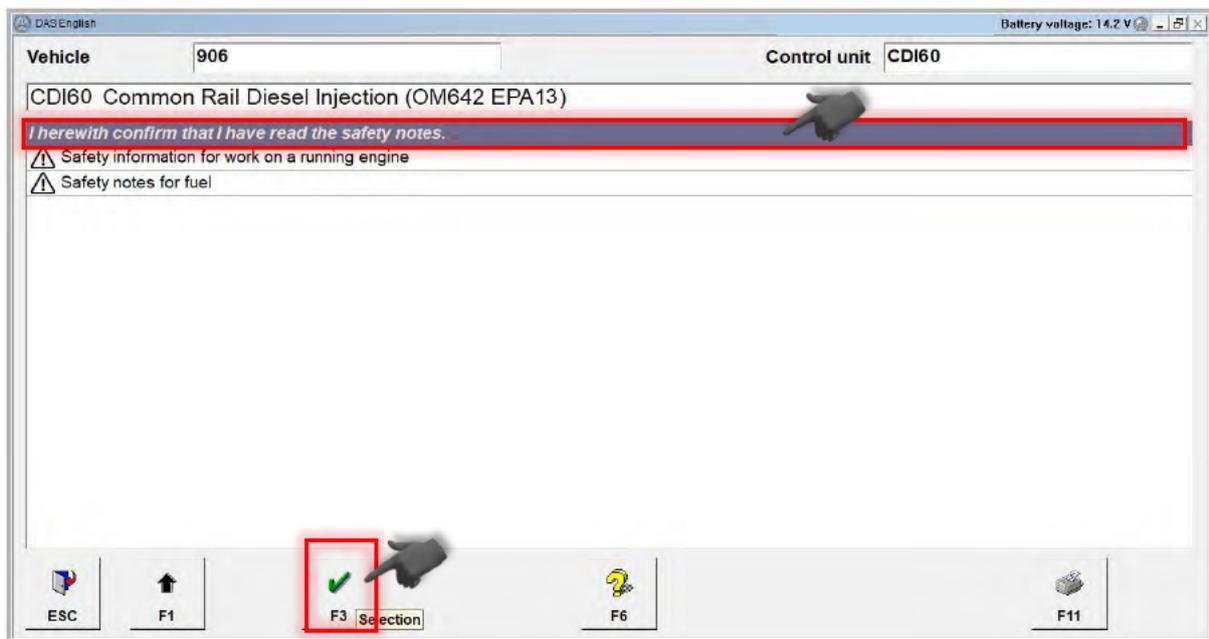
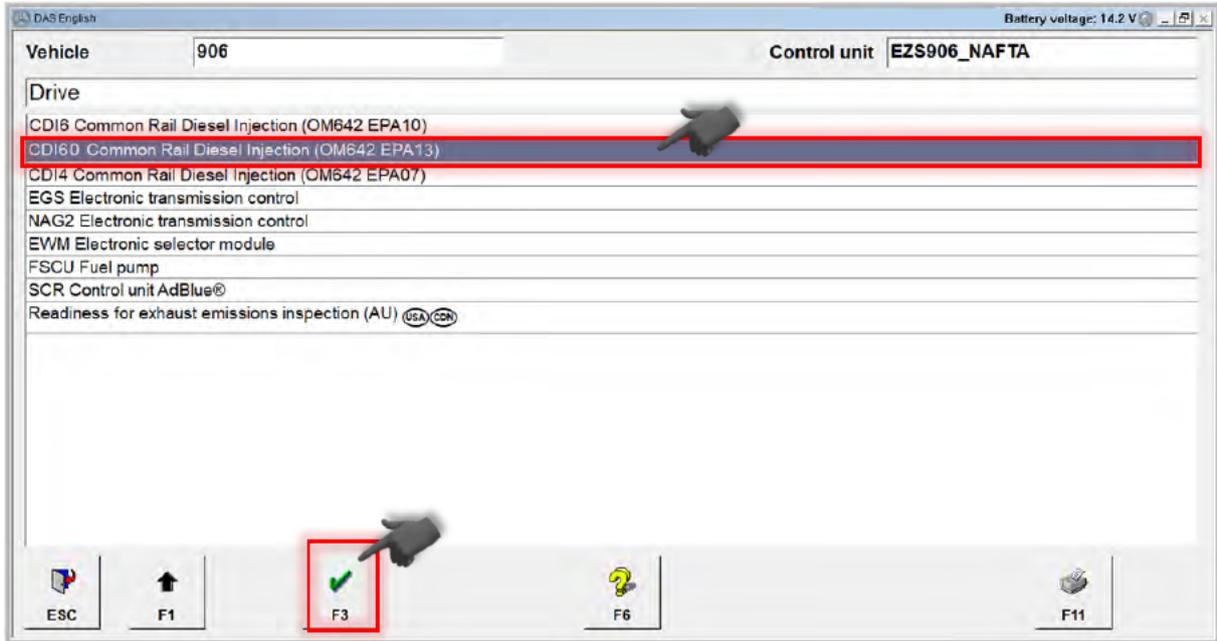
Parts of the procedure via the diagnostic system are shown on the following pages.

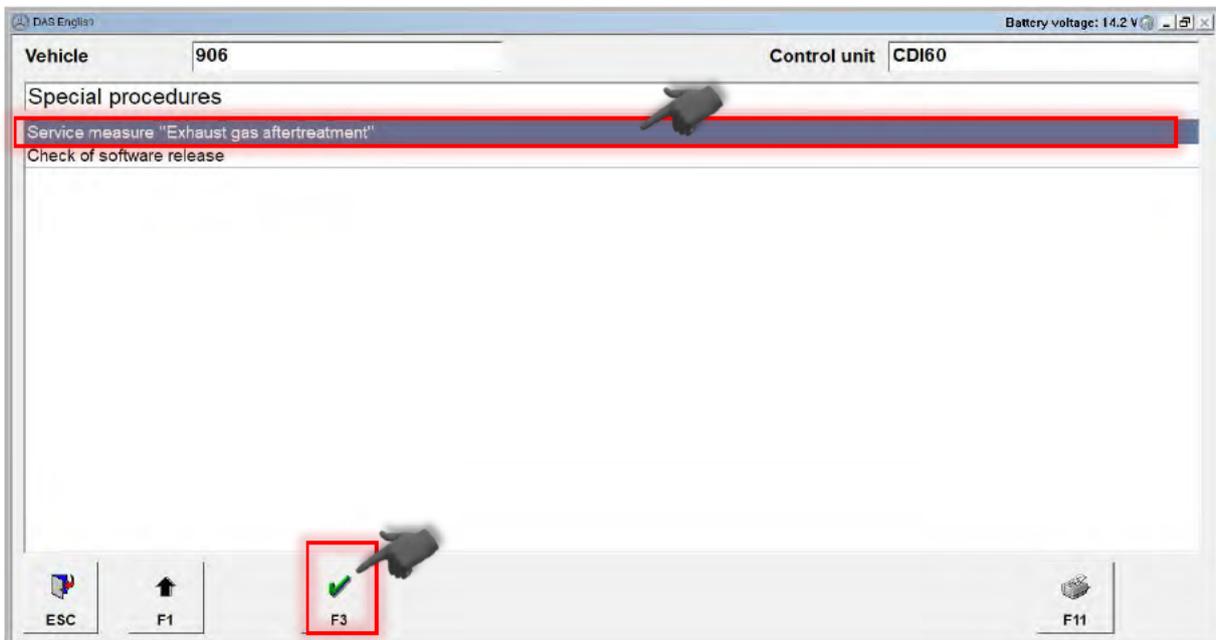
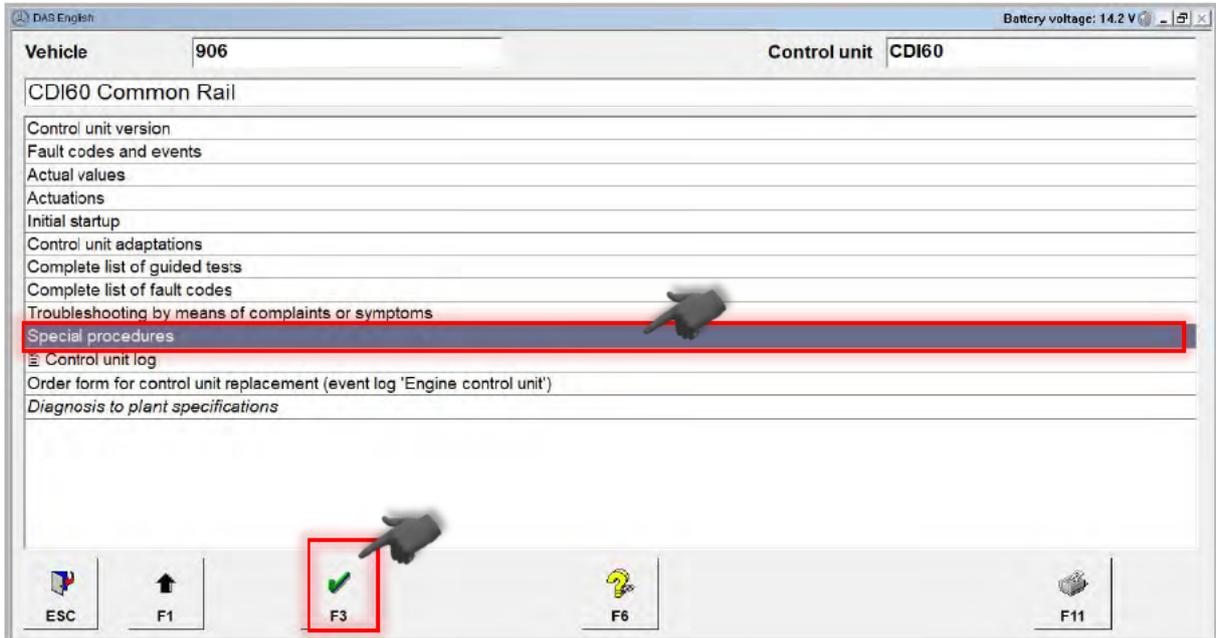


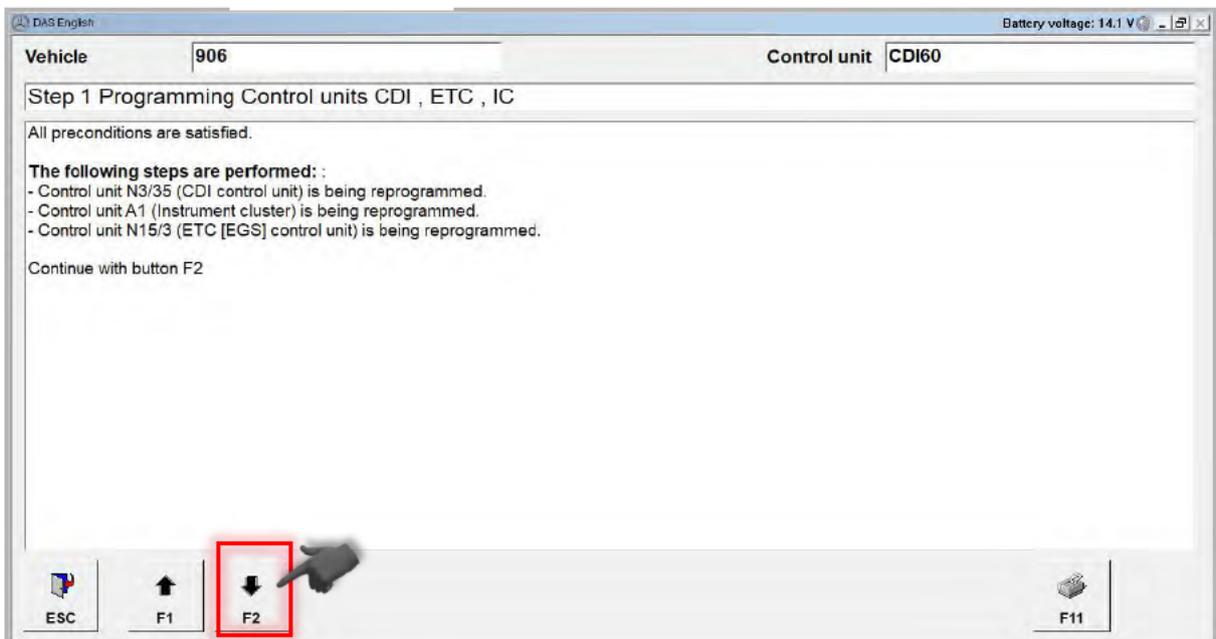
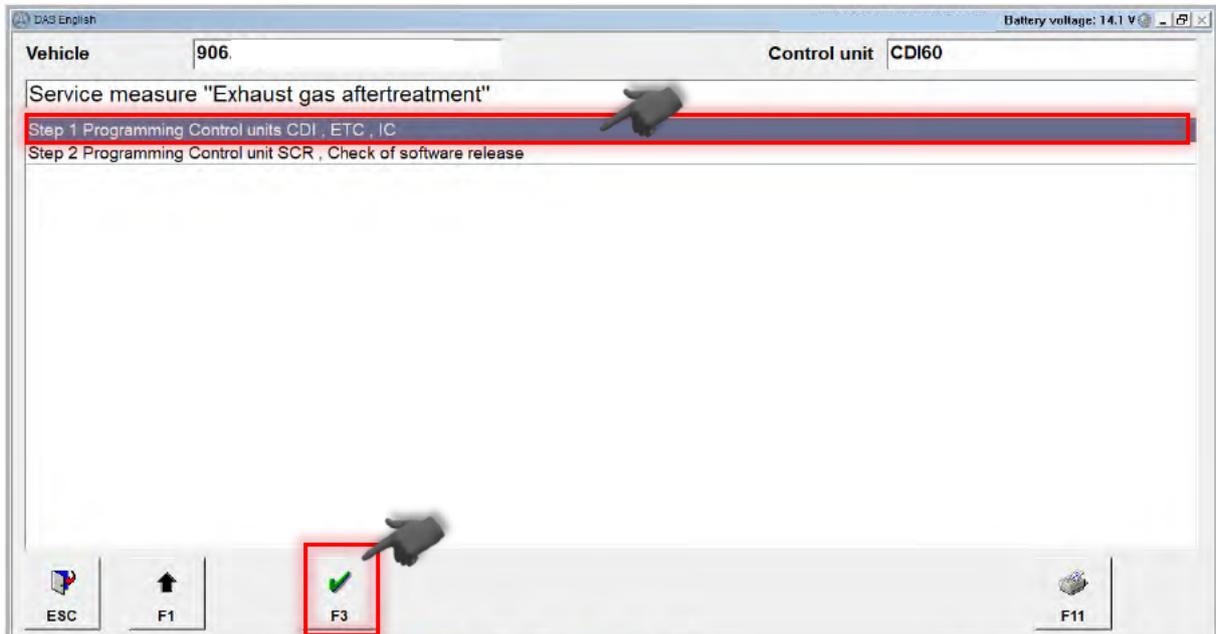


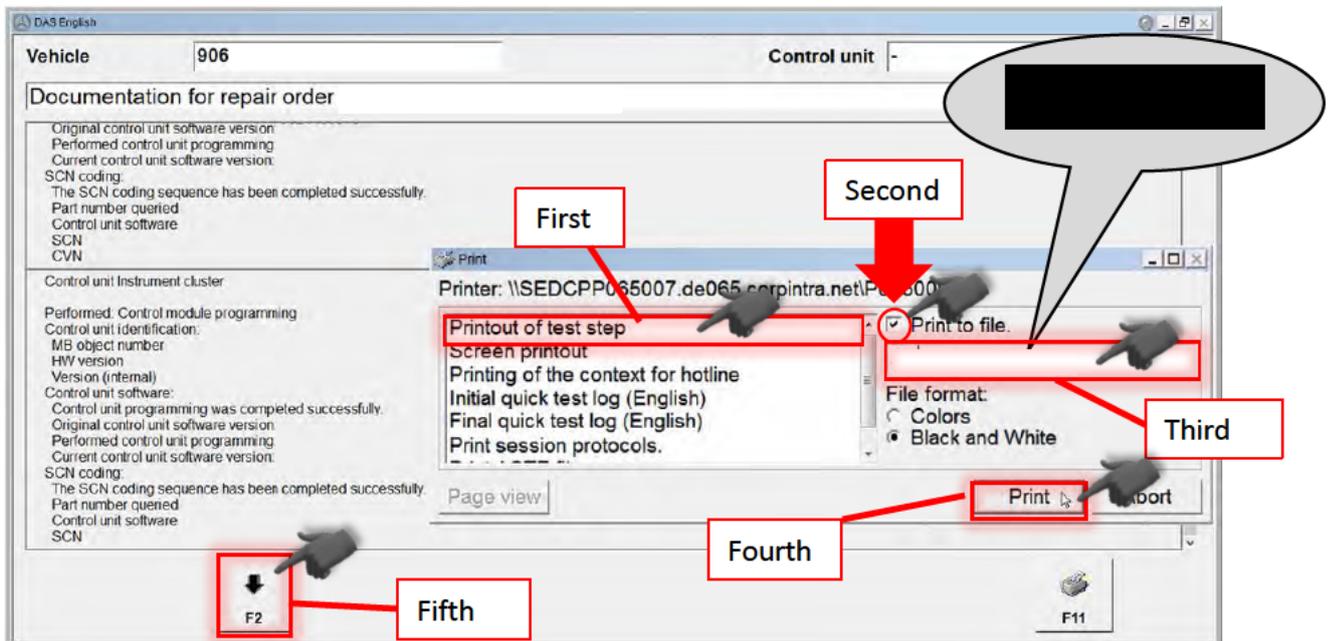
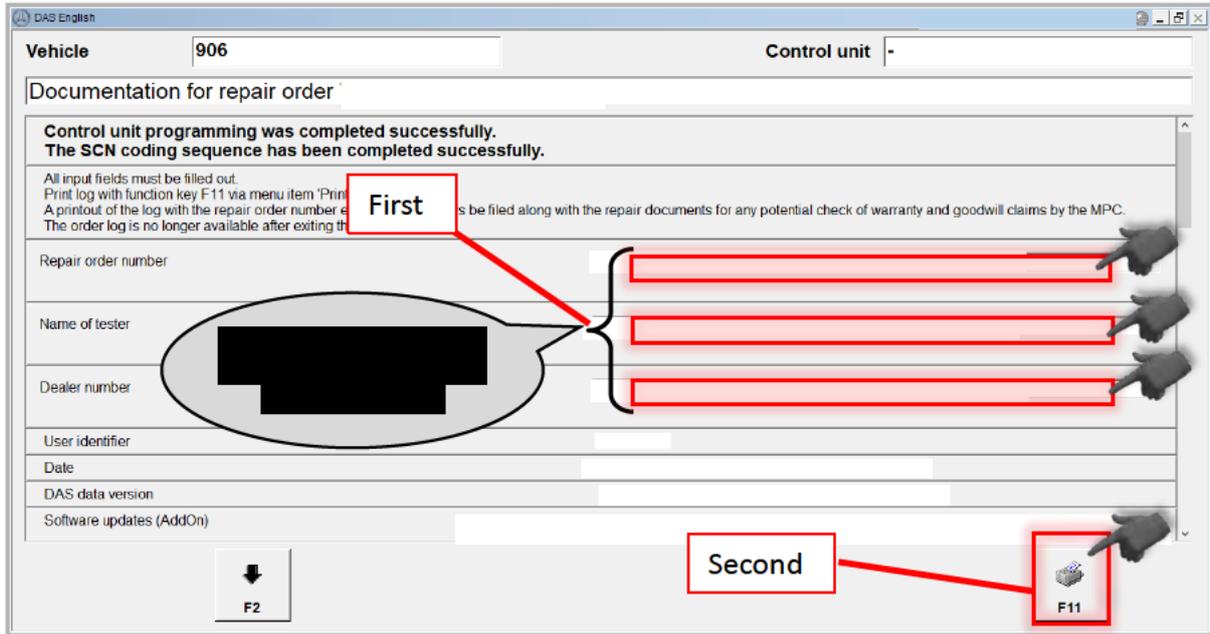


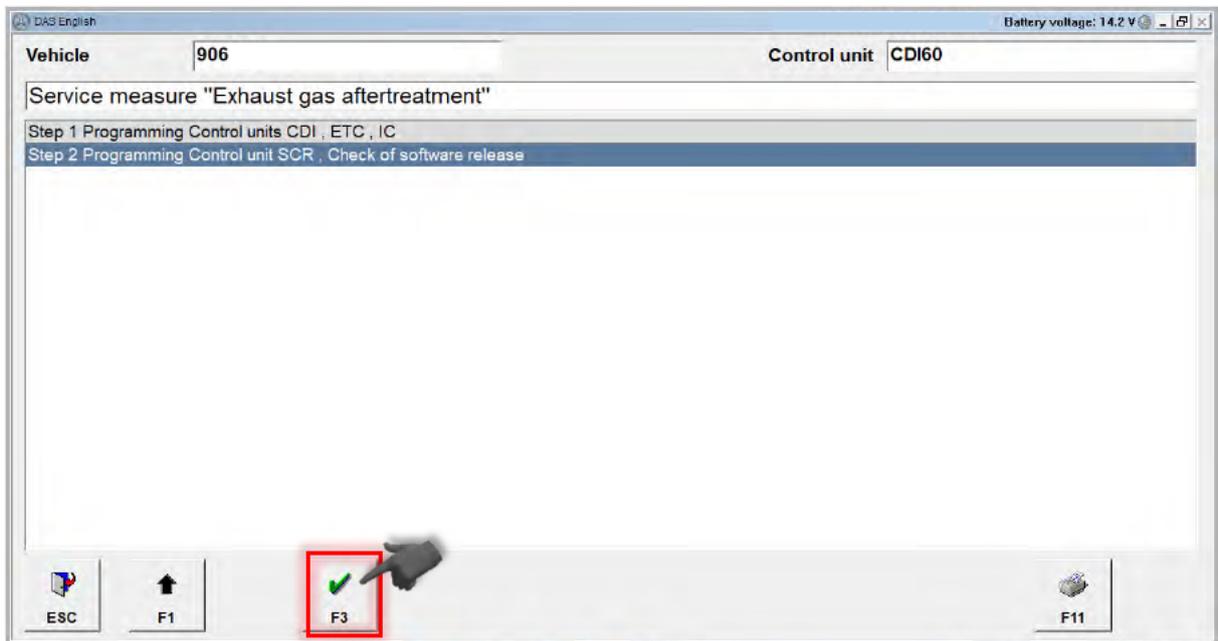
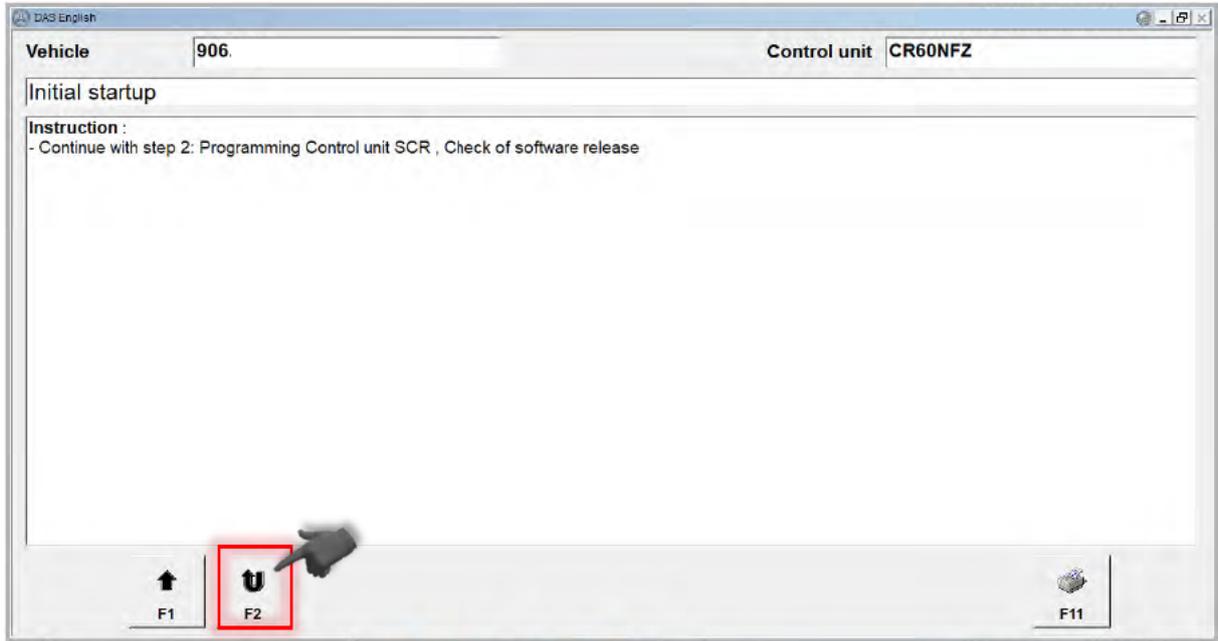


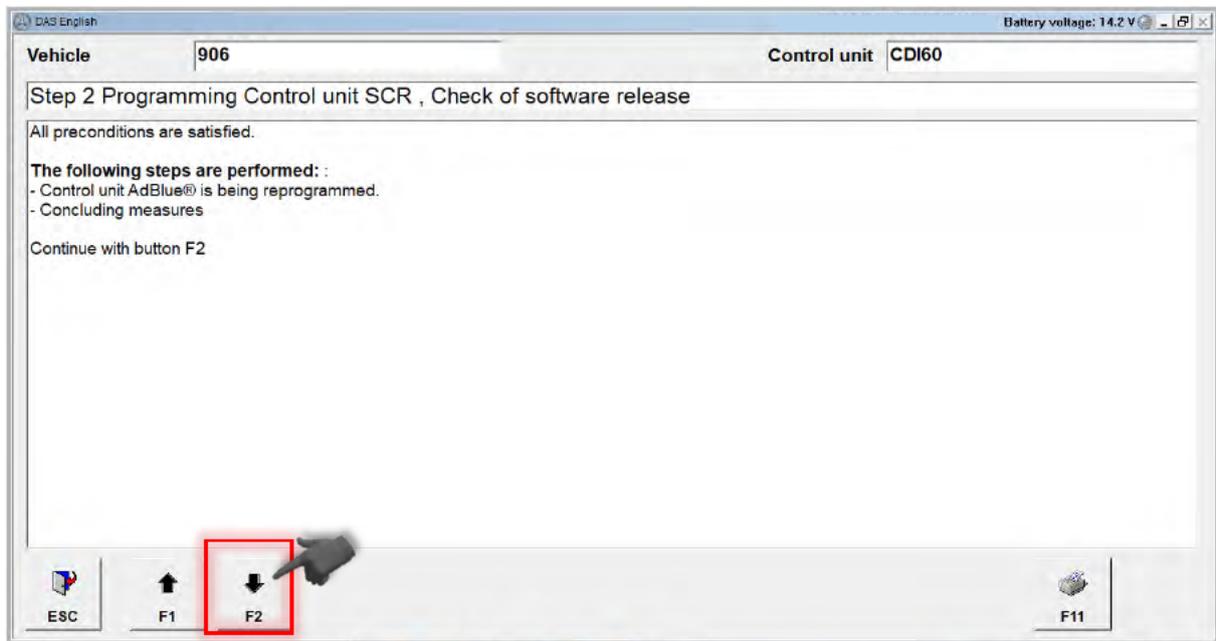
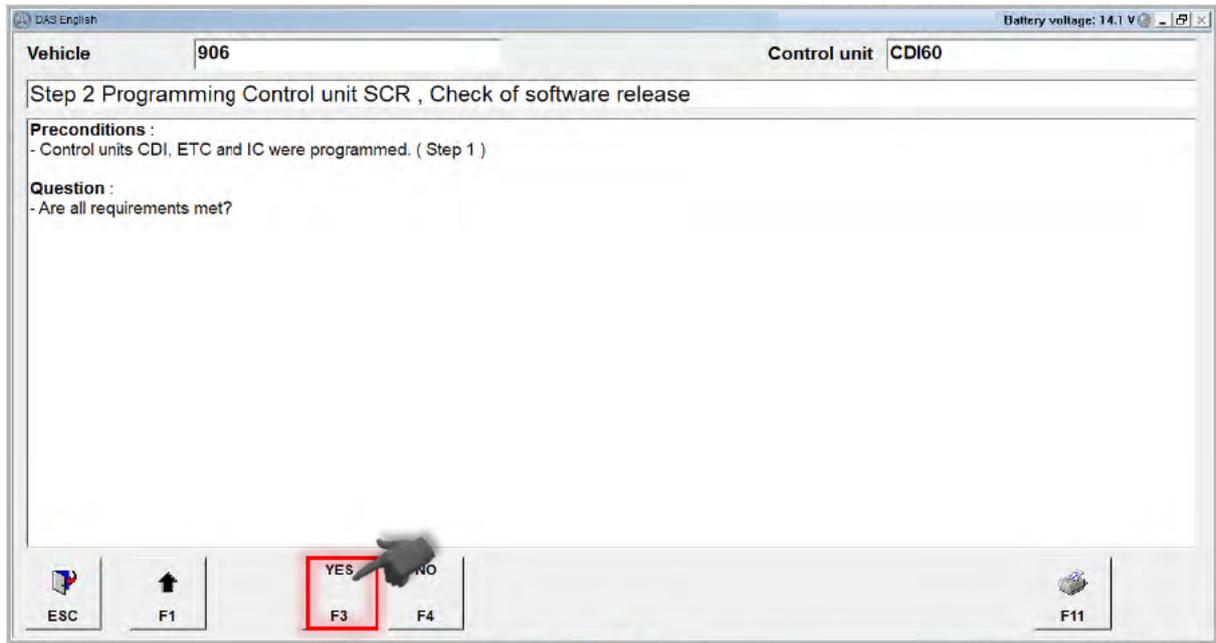


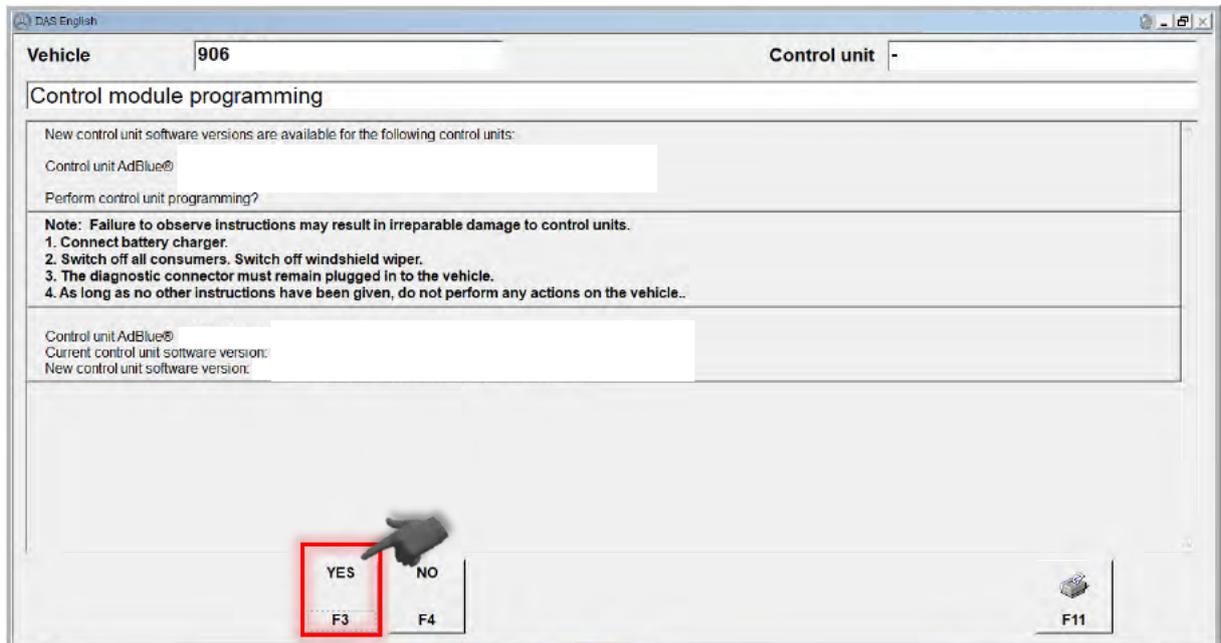
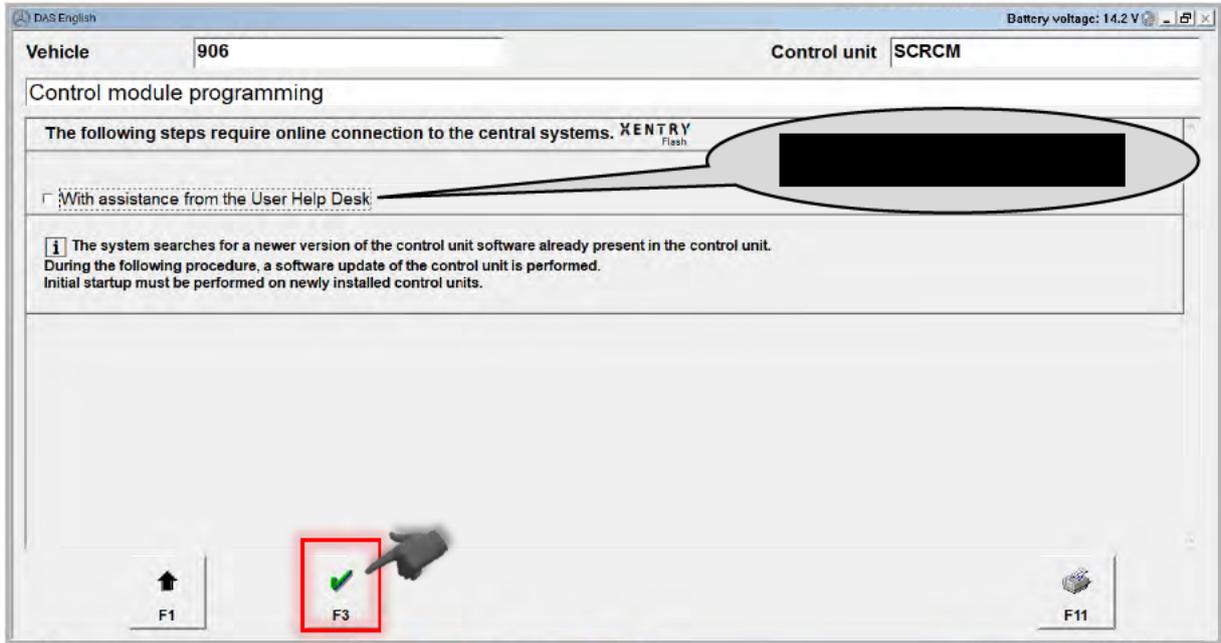


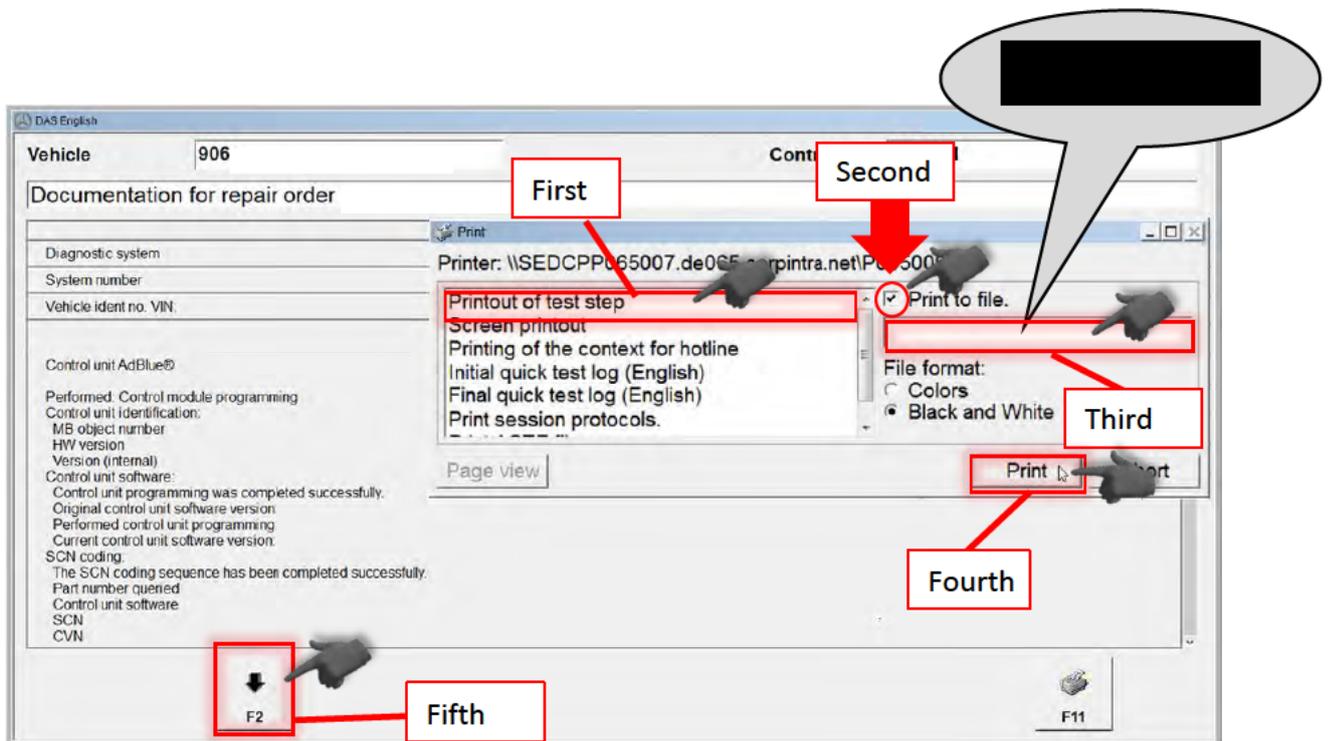
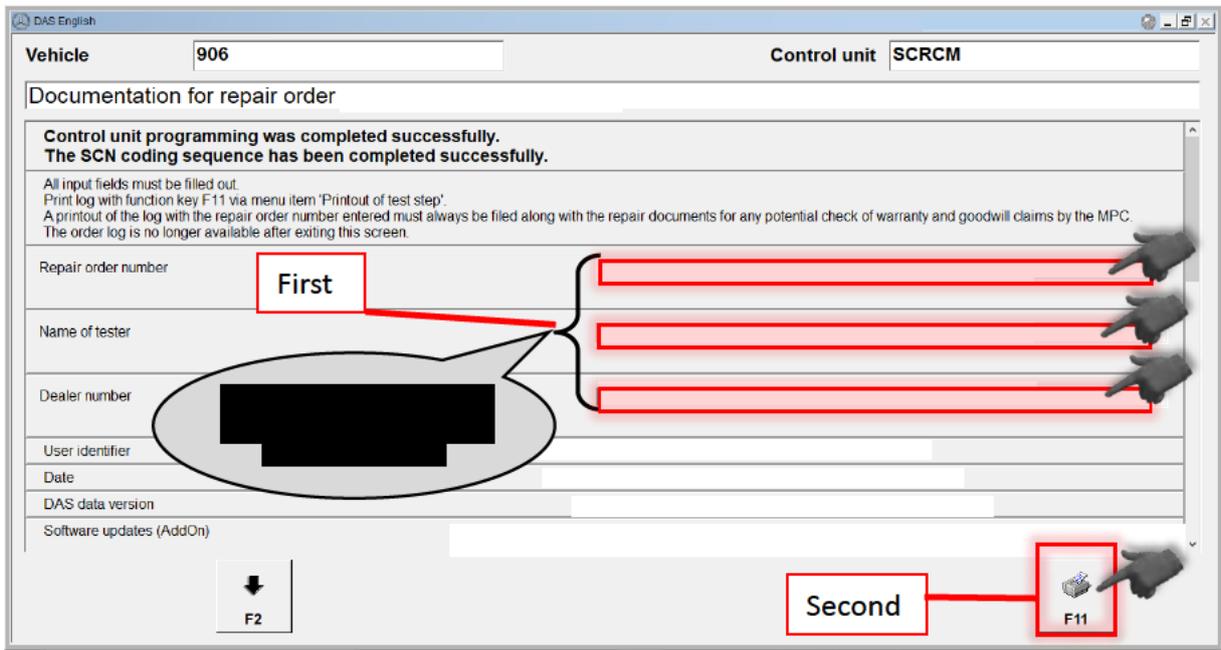












DAS English Battery voltage: 12.1 V

Vehicle Control unit

Service measure "Exhaust gas aftertreatment"

Instruction :
- Fill out "APPROVED EMISSION MODIFICATION LABEL"
- Part number : A 000 584 93 13

Fill out the fields :
- EMISSION MODIFICATION PROGRAM NO. = 2020040007
- DEALER CODE
- DATE

Tick the following components :
- NOx Sensor
- SCR-Catalyst
- Instrument Cluster
- Software Update

Instruction :
- Attach it to the hood.

Continue with button F2



APPROVED EMISSION MODIFICATION LABEL	
EMISSION MODIFICATION PROGRAM NO:	2020040007
DEALER CODE:	[your code]
DATE:	[current date]
U.S. EPA: California:	
This vehicle has received an Approved Emission Modification	
The following components have been installed or modified:	
- NOx Sensor <input checked="" type="checkbox"/>	- DPF + DOC <input type="checkbox"/>
- SCR-Catalyst <input checked="" type="checkbox"/>	- TCU/HCU <input type="checkbox"/>
- Instrument Cluster <input checked="" type="checkbox"/>	- ECU <input type="checkbox"/>
- Lambda Sensor <input type="checkbox"/>	- PM Sensor <input type="checkbox"/>
- Software Update <input checked="" type="checkbox"/>	
A 000 584 93 13	

ESC F1 F2 F8 F11

77

Complete the information on the APPROVED EMISSION MODIFICATION LABEL and attach it to the hood near the hood lock.



The attachment areas must be entirely free from dust and grease.

Otherwise, adequate adhesion cannot be ensured.



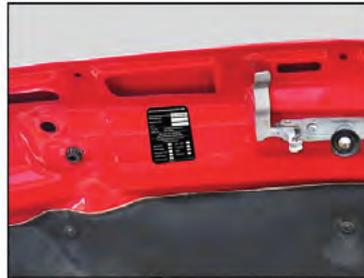
Fill in Emission Modification Program No., your dealer code, the date of the repair and mark the components that have been installed or modified. Use a black permanent marker (0.8 mm).



A 000 584 93 13



Failure to comply may result in dealer debit and/or possible fines.



APPROVED EMISSION MODIFICATION LABEL

EMISSION MODIFICATION PROGRAM NO: 2020040007

DEALER CODE: _____

DATE: _____

U.S. EPA: 40CFR896.1816-08 HDV
California: ULEV II MDV

This vehicle has received an Approved Emission Modification

The following components have been installed or modified:

- NOx Sensor	<input checked="" type="checkbox"/>	- DPF + DOC	<input type="checkbox"/>
- SCR-Catalyst	<input checked="" type="checkbox"/>	- TCU/HCU	<input type="checkbox"/>
- Instrument Cluster	<input checked="" type="checkbox"/>	- ECU	<input type="checkbox"/>
- Lambda Sensor	<input type="checkbox"/>	- PM Sensor	<input type="checkbox"/>
- Software Update	<input checked="" type="checkbox"/>		

A 000 584 93 13

DAS English

Vehicle: 906 Control unit: CDI60

Report

Service measure "Exhaust gas aftertreatment"

The procedure was completed successfully.

Overview

N3/35 (CDI control unit)	OK
N141 (AdBlue® control unit)	OK
N15/3 (ETC [EGS] control unit)	OK
A1 (Instrument cluster)	OK
A97/1 (NOx sensor control unit upstream of SCR catalytic converter)	OK
A97/2 (NOx sensor control unit downstream of SCR catalytic converter)	OK
VeDoc Code OA3	OK
VeDoc Code OA0	OK
VeDoc Code OC2	OK

Details

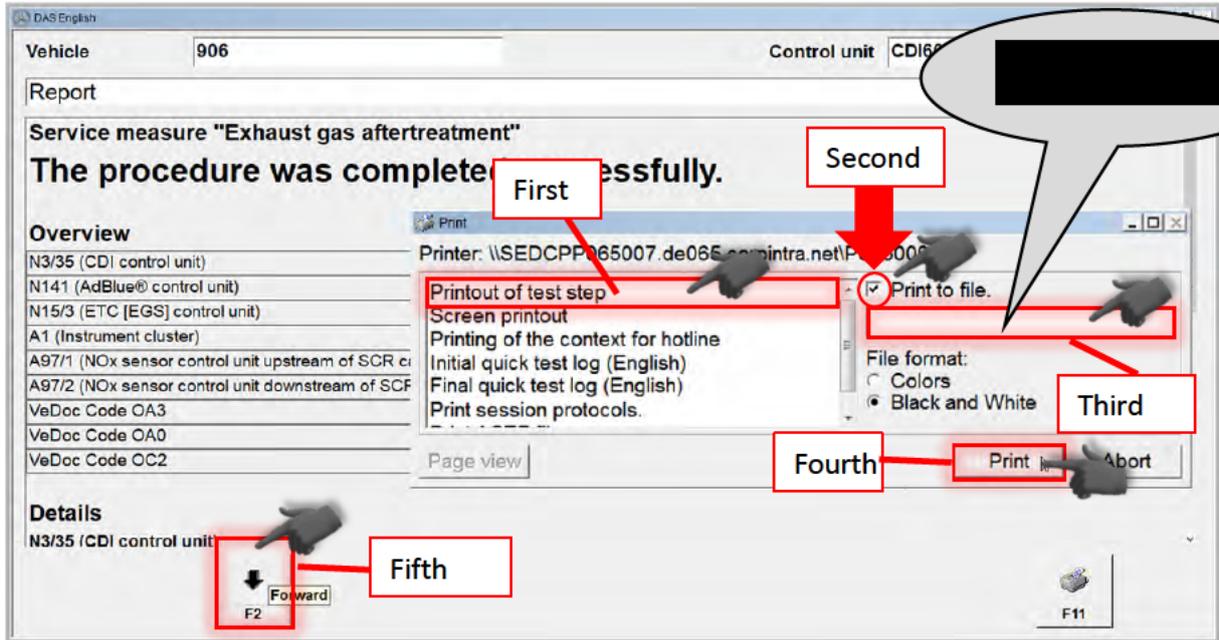
N3/35 (CDI control unit)

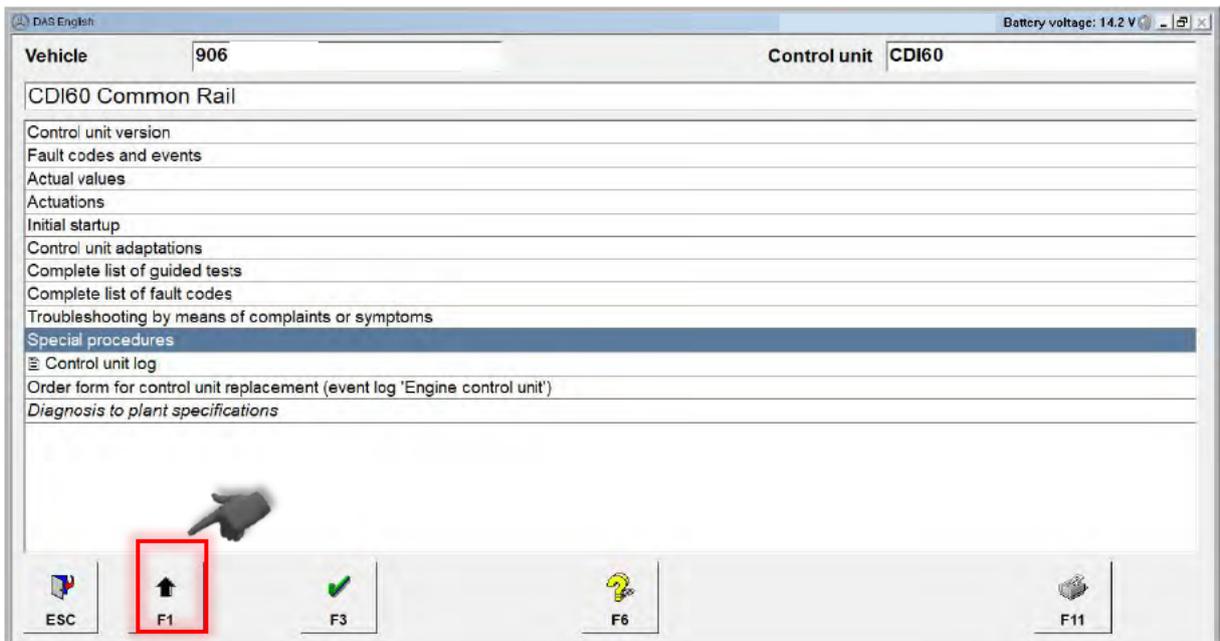
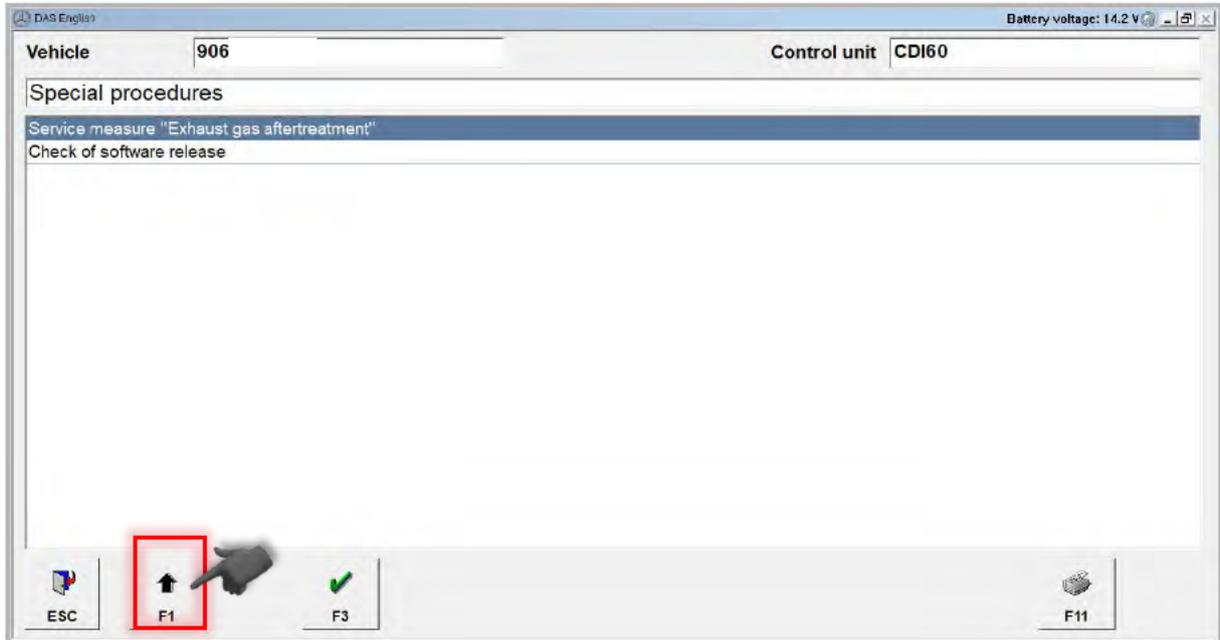
↓ Forward F2

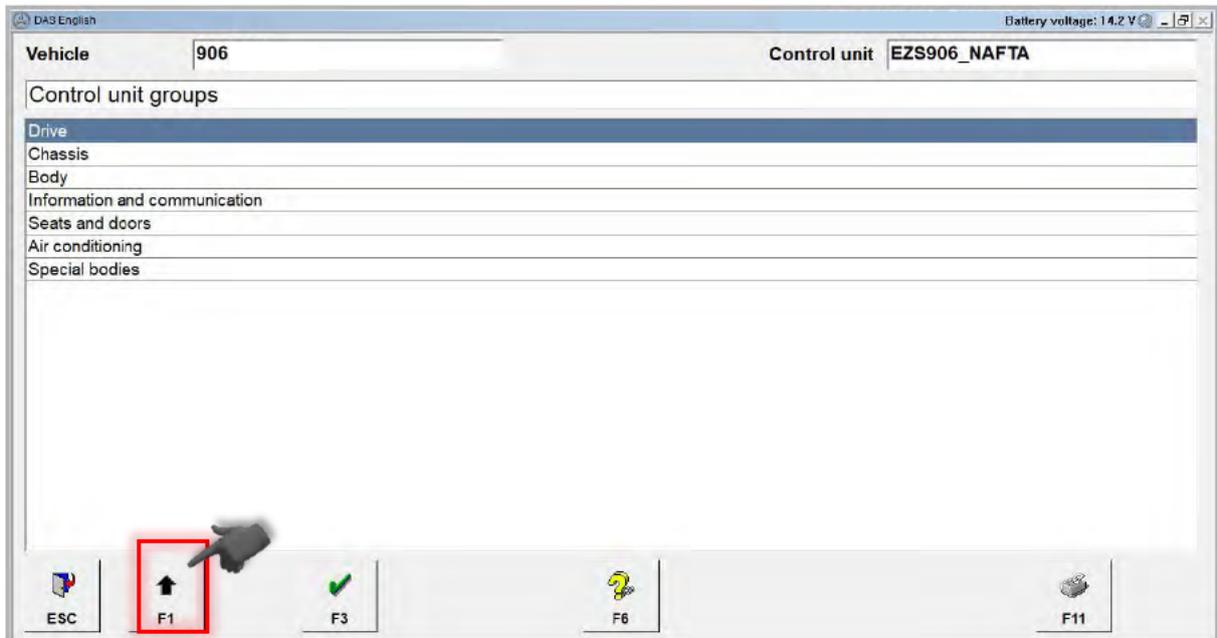
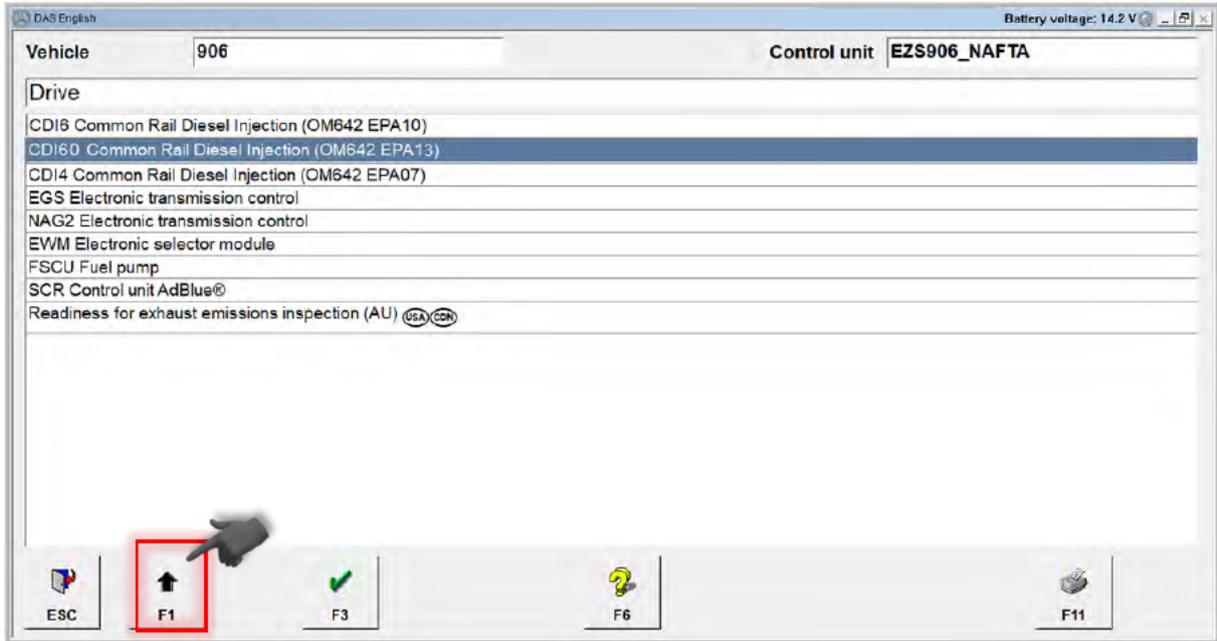
First → F11



If the process was terminated incorrectly, repeat the process. If the fault persists, create a PTSS case.







- 78 Perform a final quick test and transmit to paperless pXD.



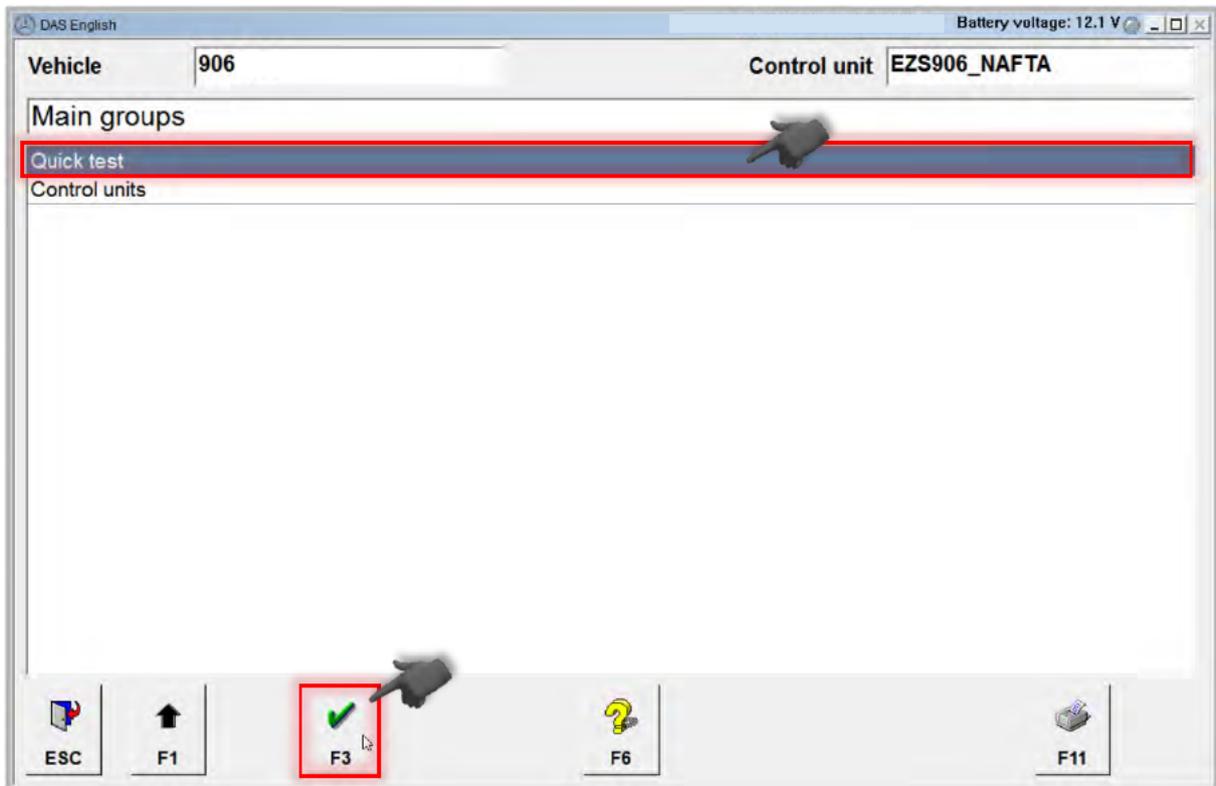
Faults stored in the memory, caused by disconnected lines during the inspections, must be deleted from the fault memory after completing the work.



The procedure via the diagnostic system is shown on the following pages.



If faults are current and stored in the updated control modules they need to be addressed. If technical hardships occur create a PTSS case.



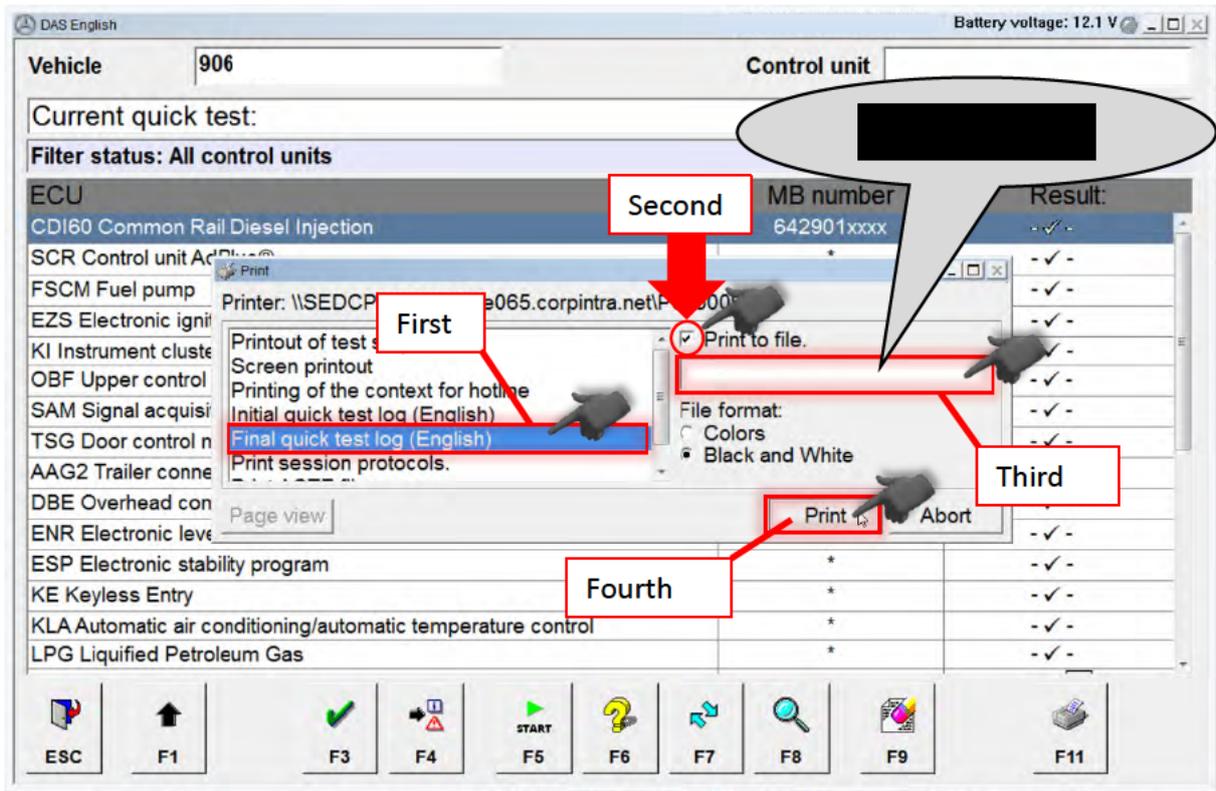
The screenshot shows the DAS English interface with the vehicle ID '906' and battery voltage '12.1 V'. A 'Quick test' dialog box is open, displaying 'Communication in progress.' and an icon of a car connected to a laptop, labeled 'SAM'. A speech bubble points to a blacked-out area in the dialog. The background table shows the following data:

ECU	MB number	Result:
EZS Electronic ignition switch	*	--✓--
CDI60 Common Rail Diesel Injection	642901xxxx	--✓--
LPG Liquefied Petroleum Gas	*	--✓--
KI Instrument cluster	*	--✓--
OBF Upper control panel	*	--✓--

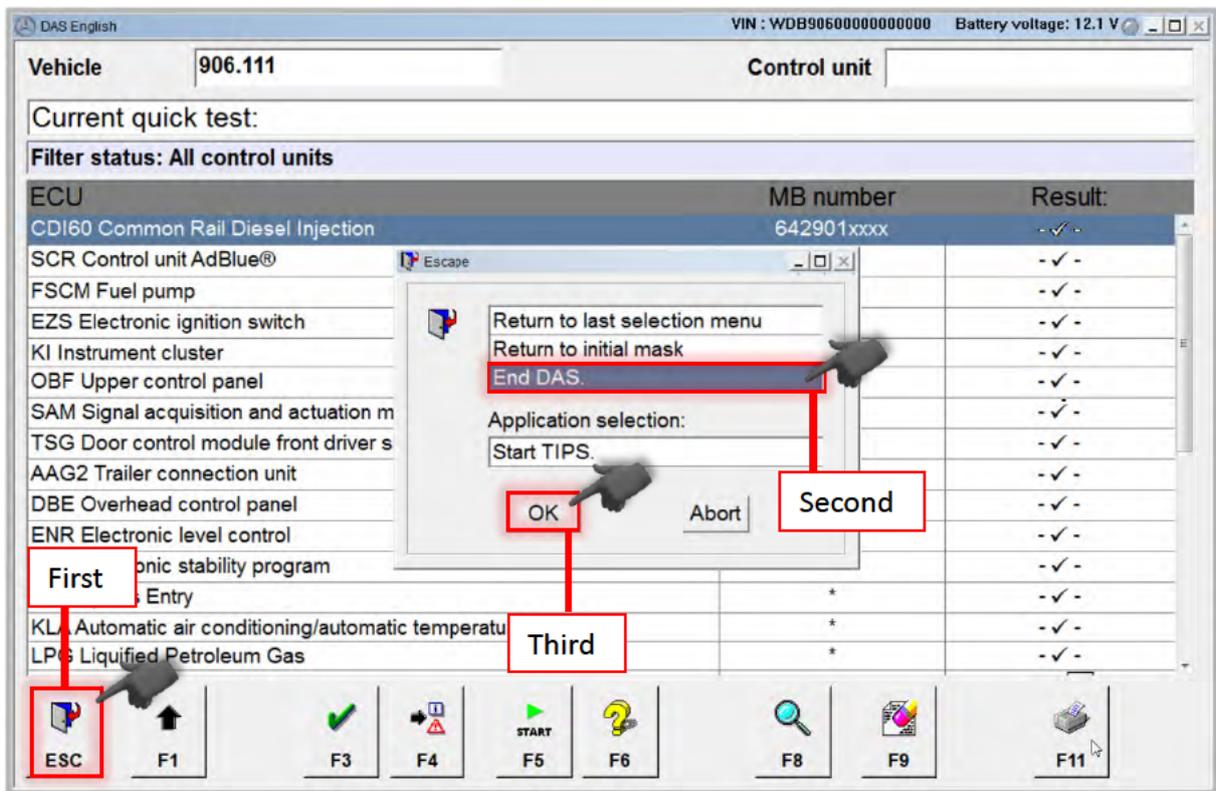
The screenshot shows the DAS English interface with the vehicle ID '906' and battery voltage '12.1 V'. The 'Quick test' dialog box is closed. The background table shows the following data:

ECU	MB number	Result:
CDI60 Common Rail Diesel Injection	642901xxxx	--✓--
SCR Control unit AdBlue®	*	--✓--
FSCM Fuel pump	*	--✓--
EZS Electronic ignition switch	*	--✓--
KI Instrument cluster	*	--✓--
OBF Upper control panel	*	--✓--
SAM Signal acquisition and actuation module	*	--✓--
TSG Door control module front driver side	*	--✓--
AAG2 Trailer connection unit	*	--✓--
DBE Overhead control panel	*	--✓--
ENR Electronic level control	*	--✓--
ESP Electronic stability program	*	--✓--
KE Keyless Entry	*	--✓--
KLA Automatic air conditioning/automatic temperature control	*	--✓--
LPG Liquefied Petroleum Gas	*	--✓--

The bottom toolbar contains several function keys: ESC, F1, F3, F4, F5 (START), F6, F8, F9, and F11. The F11 key, which has a printer icon, is highlighted with a red box and a mouse cursor.



79 End the XENTRY session and disconnect the diagnostic system. (DAS)





- 80 Switch off the ignition.
- 81 Disconnect the battery charger.
- 82 Close the hood.
- 83 Connect any aftermarket devices that were connected to the X11/4 diagnostic socket before.

**Replacement parts NC34213NEC USA**

Part No.	Designation	Quantity
A XXX XXX XX XX	Emissions Campaign Package	1
A 906 490 08 83 80	SCR catalytic converter	1



You only have to order the service measure package, all items listed below are already included and **do not** have to be ordered separately.

Emissions Campaign Package (A XXX XXX XX XX) includes:

Part No.	Designation	Quantity
A 642 905 20 00 85	NO _x Sensor package	1
A 906 900 81 03	Instrument Cluster (mph)	1
A 906 995 02 02	Pipe Clamp	1
A 000 995 11 33	Profile Clamp	1
A 000 490 13 41	Clamp SCR/DPF	1
A 220 546 18 43	Mounting Tab	1
A 123 994 13 45	Spring Nut	1
A 000 994 32 11	Lock Pin	3
A 007 997 56 90	Cable Tie (with holding clip)	3
A 002 997 24 90 64	Cable Tie	4
N 000000 003477	Nut Fastener	4
A 207 492 00 00	Profile Seal	1
A 000 584 93 13	APPROVED EMISSION MODIFICATION LABEL	1

TO: Mercedes-Benz Dealer Principals, General Managers, Sales Managers, Service Managers, Parts Managers	FROM: Gregory Gunther, Department Manager, Vehicle Compliance and Analysis, Engineering Services
RE: Emission Modification Notification – [[2020050005]] GLK BlueTEC 4MATIC Update – Emission Modification Category (EMC) #9 MY 14-15 GLK250 BlueTEC 4MATIC (X204) vehicles	DATE: [[Month XX, 2020]]

IMPORTANT EMISSION MODIFICATION NOTIFICATION

Attention Dealership Management

- Please ensure that every dealership associate is aware of this Emission Modification notification, and that customer-facing associates provide transparent information to Customers.
- Refer to VMI in NetStar to determine which units in your inventory are affected by this Emission Modification. This notification hereby instructs **Dealers not to sell or cause to be sold, or lease or cause to be leased, or introduce into commerce, or export** from the United States to another country, any vehicle covered by this notification, unless it has received the Approved Emission Modification described in this notification. **Failure to adhere to these instructions may result in possible penalties or fines.**
- Run a VMI check on all vehicles brought into your Service Department to determine if they are affected by any service campaign or recall and perform accordingly.
- Always act with the principles of Customer Experience in mind.
- Refer to the work instructions and ensure each step in the defined process is followed exactly as described. Steps such as affixing the vehicle label and correctly filling out the vehicle label must be adhered to. **Failure to adhere to these instructions may result in possible penalties or fines.**
- Ensure your warranty administrator submits warranty claims for this Emission Modification in a timely manner. Extended warranty applicability stated herein is automatically enabled once the Approved Emission Modification is completed and the warranty claim is processed.
- A proposed class action settlement has been filed that provides compensation to customers who receive the Emission Modification and meet certain other requirements. To receive such compensation, class members will need to submit (among other things) copies of their Repair Order showing proof that the Emission Modification was installed and (if any) proof of transportation expenses incurred to receive the Emission Modification—up to \$35—in the event that a loaner, shuttle, or alternative transportation cannot be arranged by your dealership. Please remind customers to save this documentation.
- Customers should **not** be given information about the Emission Modification or the class settlement that deviates from, or is in addition to, what is in authorized communications reflected in this NCU or the official websites: [\[class settlement website\]](#) and <https://BlueTecUpdate.mbusa.com> **Failure to adhere to this instruction could threaten final implementation of the settlement and may result in possible penalties.**

Other than the benefits class members can claim through the class action settlement process, customers cannot be offered any compensation in exchange for receiving the Emission Modification. **Failure to adhere to this instruction may result in possible penalties.** (At their discretion and on a case-by-case basis, Dealers can continue to offer customers goodwill for other reasons consistent with normal business practices and policies, but additional compensation in exchange for receiving the Emissions Modification is prohibited.)



Information for Customers:

- For information related to this specific Emission Modification, Customers can refer to: <https://BlueTecUpdate.mbusa.com>
- *[if the preliminary approval motion has been filed, then add:]* For information related to the proposed class action settlement, Customers can refer to: [settlement URL](#)
- Mercedes-Benz Customer Assistance Center: **1-833-841-9362**

Please note that all customer inquiries should be directed to the Customer Assistance Center at 1-833-841-9362.

Sincerely,

Gregory Gunther

Department Manager, Vehicle Compliance & Analysis



Emission Modification Notification			[[Month XX, 2020]]
Campaign No.:	EMC#	Campaign Desc. :	BlueTEC Update – GLK (X204)
2020050005	9	19P4992002	
<p>This is to notify you of an Emission Modification Notification to update the emissions control system on approximately 7734 Model Year (“MY”) 2014-2015 GLK250 BlueTEC 4MATIC (X204) diesel vehicles. Emission Modification information will be visible on the https://BlueTecUpdate.mbusa.com website and may generate questions from Owners and Lessees. Affected VINs will be flagged in VMI as “OPEN” on [[Month XX, 2020]].</p>			
Background			
Issue	Mercedes-Benz USA, LLC (“MBUSA”) is modifying the emissions control system on certain diesel vehicles. The Emission Modification for MY 14-15 GLK250 BlueTEC 4MATIC (X204) vehicles has been approved by EPA and CARB, and is now ready for installation. An authorized Mercedes-Benz Dealer will install the Emission Modification at no cost to the Owner/Lessee.		
What We’re Doing	An authorized Mercedes-Benz Dealer will replace certain emissions control system components and update certain software in eligible vehicles.		
Parts	Parts are available to order.		
Vehicles Affected			
Vehicle Model Year(s)	MY 2014-2015		
Vehicle Model	GLK250 BlueTEC 4MATIC (X204)		
Vehicle Populations			
Total Campaign Population	7734		
Total Customer Vehicles in Campaign	7734		
Next Steps/Notes			
Customer Notification Timeline	Customer letters will be mailed on [[Month XX, 2020]].		
AOMS/SOMS	This Emission Modification Notification may initiate questions from customers and the media. Please ensure your Dealers have read and understand this notice.		
Notes	<ul style="list-style-type: none"> • IMPORTANT: This notification hereby instructs Dealers not to sell or cause to be sold, or lease or cause to be leased, or introduce into commerce, or export from the United States to another country, any vehicle covered by this notification, unless it has received the Approved Emission Modification described in this notification. Failure to adhere to these instructions may result in possible penalties or fines. • Follow ALL steps of the work instructions. • More information about a class action settlement providing incentives to customers who receive the Emission Modification can be found at [settlement URL]. • Emission Modification information: <ul style="list-style-type: none"> • Mercedes-Benz specific emission modification related information: https://BlueTecUpdate.mbusa.com • Mercedes-Benz Customer Assistance Center: 1-833-841-9362 		
<p>While we regret any inconvenience this may cause, MBUSA is determined to maintain a high level of vehicle quality and customer satisfaction. Please refer all customer inquiries to the Customer Assistance Center at 1-833-841-9362.</p>			



DEALER FAQs

What is the reason for this Emission Modification?

On [\[date\]](#), Daimler AG (“DAG”) and Mercedes-Benz USA, LLC (“MBUSA”) reached a settlement with the United States Department of Justice (“DOJ”), the Environmental Protection Agency (“EPA”), the California Air Resources Board (“CARB”), and the California Attorney General’s Office (“CA AG”) regarding the emissions control system in MY09 to MY16 OM642 and OM651 BlueTEC II diesel vehicles sold or leased in the US. As part of this settlement, MBUSA is offering Owners and Lessees a modification to the vehicles’ emissions control systems, referred to as an Emission Modification.

Eligible vehicles and vehicle model years have been separated into Emission Modification Categories (“EMCs”) to facilitate the campaign. Each EMC will be launched in phases, after agency approval. Please refer to our public website <https://BlueTecUpdate.mbusa.com> for more information on your particular vehicle.

The Emission Modification for the MY14 to MY15 GLK 250 has been approved by EPA and CARB, and is now ready for installation in customer vehicles. MBUSA will be working with EPA and CARB to secure approval for Emission Modifications for the remaining eligible vehicles, and will notify authorized Mercedes-Benz Dealers upon approval of each Emission Modification.

What is an “EMC”?

To facilitate the Emission Modifications on the subject vehicle population, the vehicle models and model years have been separated into Emission Modification Categories, “EMCs,” as shown on the second page of this NCU.

What are the eligible vehicles that will receive an Emission Modification under this settlement?

This settlement pertains specifically to vehicles equipped with four and six cylinder (OM651 & OM642) diesel engines sold between MY09 and MY16. For more information, please visit <https://BlueTecUpdate.mbusa.com>.

How will the Emission Modification be communicated to Owners and Lessees in the US?

Owners and lessees will first receive a letter in the mail letting them know that the Emission Modification for their vehicle is available and to bring in their vehicle to their preferred authorized Mercedes-Benz Dealer. Additional outreach efforts will be implemented as well.

How do Owners and Lessees find out whether their vehicle is affected by the Emission Modification Campaign?

Owners and Lessees with affected vehicles will be mailed a notification letter when the Emission Modification is available. Owners and Lessees can always check if their vehicle is affected by entering their VIN into the following site: <https://BlueTecUpdate.mbusa.com>.

All vehicles covered by the Emission Modification program also are covered by the proposed class action settlement described above.

Owners and Lessees might complain about a Check Engine light; will the Dealer repair the vehicle as part of the emissions update?

A Check Engine light can illuminate for a number of reasons. Authorized Mercedes-Benz Dealers can offer assistance diagnosing and repairing the issue.



Can an Owner or Lessee get a loaner vehicle or alternate transportation while the Emission Modification is being performed?

Where loaner vehicles are available, Dealers are requested to offer loaner vehicles to each Eligible Owner and Eligible Lessee at no cost where the implementation of the Approved Emission Modification will take 3 hours or longer to complete.

In an instance where the Approved Emission Modification takes 3 hours or longer to complete, and where the Dealer does not make available a loaner car or offer a shuttle service or alternative transportation, Class Members will be eligible to submit a claim for transportation costs of up to \$35 along with their claims for other settlement compensation. For more information on the transportation allowance, customers should visit the class action settlement website at www.XXXXXXXXXX.com, and should be reminded to save their receipts.

What is Mercedes-Benz going to do for Owners and Lessees given this inconvenience?

Dealers will attempt to minimize any inconvenience during the Emission Modification process. Should Owners or Lessees experience an excessive delay with the Emission Modification of their vehicle, they can contact our Customer Assistance Center at 1-833-841-9362.

As part of the proposed consumer class action resolution, current owners and lessees of eligible vehicles who go to authorized Mercedes-Benz repair facilities, have an Approved Emission Modification installed, and meet certain other requirements will be eligible to claim a payment of up to ["x" dollars]. For more information on eligibility and the process for filing a claim, customers should call the number above or visit the class action settlement website at www.XXXXXXXXXX.com.

Other than the benefits that class members can claim through the class action settlement process, customers cannot be offered any compensation in exchange for receiving the Emission Modification. **Failure to adhere to this instruction may result in possible penalties.** (At their discretion and on a case-by-case basis, Dealers can continue to offer customers goodwill for other reasons consistent with normal business practices and policies, but additional compensation in exchange for receiving the Emissions Modification is prohibited.)

Where can an Owner or Lessee have the Emission Modification work completed?

Owners and Lessees will be asked to contact their local preferred authorized Mercedes-Benz Dealer to arrange for an appointment to complete the FREE Emission Modification.

Can Owners and Lessees have the Emission Modification performed if they did not receive a Customer Letter but own a Mercedes-Benz BlueTEC Diesel vehicle?

Owners and Lessees should first check the eligibility and status of their vehicle by visiting <https://BlueTecUpdate.mbusa.com>. To be automatically alerted when the Emission Modification is available for their vehicle, Customers are being asked to complete the "Keep me Updated" section of the website after entering their VIN to check the status.



Do Owners and Lessees have to wait for the Emission Modification Campaign letter before their vehicle can be fixed?

Owners and Lessees do not need to present a copy of the letter to receive the FREE Emission Modification, but they should wait to bring their vehicle in for the Emission Modification until they receive notice that the Emission Modification has been launched for their specific vehicle model. The Emission Modifications will be launched in phases, pending agency approval, so the Emission Modifications for all of the subject vehicle models (all MY09 to MY16 BlueTEC II vehicles with OM642 and OM651 engines sold or leased in the US) will not be launched at the same time. Once the Emission Modification has been approved for a particular vehicle type, Owners and Lessees will be sent a letter asking them to schedule an appointment with their authorized Mercedes-Benz Dealer to perform the FREE Emission Modification.

Do Owners or Lessees need the Owner/Lessee Letter to have the Emission Modification performed?

No, Owners and Lessees with eligible vehicles do not need the Letter to have this FREE Emission Modification completed. Local authorized Mercedes-Benz repair facilities can check the eligibility and status of vehicles without the Letter.

What about Owners or Lessees who request that the Emission Modification be performed without first receiving a Letter?

No Emission Modification can be performed until EPA and CARB approve the Emission Modification for the specific model.

When will parts be available?

Parts are currently available for the Emission Modification Campaigns which have been approved by EPA and CARB. We will provide updates as parts become available for other vehicle models.

Regarding all other future vehicle categories, MBUSA is working with EPA and CARB to obtain approvals for the Emission Modification. MBUSA will notify Dealers upon approval of each Emission Modification that the Emission Modification has become available.

For up-to-date parts availability information, please refer to the website <https://BlueTecUpdate.mbusa.com>.

Are there any known vehicle symptoms associated with the Emission Modification that Owners or Lessees will notice that should lead them to stop driving the car or take to a Dealer?

No. There are no symptoms related to the Emission Modification.

What is the expected impact on an Owner's or Lessee's vehicle after the Emission Modification has been performed?

Details on the impact to vehicles are provided in the letter for each Emission Modification Category. A copy of the Owner/Lessee letter for the EMC subject to this FAQ is attached.

What types of repairs or replacements are needed?

Authorized Mercedes-Benz Dealers will replace specific emissions-related components. This varies by model and model year. For more information, please visit <https://BlueTecUpdate.mbusa.com>.

How long does this replacement take?

Replacement time is dependent upon the model and model year. This time may range from 30 minutes to a maximum of 6 hours. Details are provided in the Owner/Lessee Letter.



What if vehicles have been modified using after-market parts and/or software? Can the Emission Modification still be performed?

If the vehicle has been modified prior to receiving the Emission Modification in a manner that may yield a non-compliant emissions system (for example, removal of a catalyst, installation of parts that impact emissions or emissions-related parts, or modifications to the ECU or computer software of the vehicle), Dealers might not be able to perform the Emission Modification until the prior modifications are corrected, which will be at the Owner's/Lessee's cost. Once corrected, the vehicle may receive the Emission Modification.

What if Owners or Lessees decline to have the Emission Modification performed?

If Owners decline the Emission Modification at this time, they should be advised that certain emissions-related replacement and repair parts may no longer be available from Mercedes-Benz at some point.

If a current Owner or Lessee of an eligible vehicle does not have the Emission Modification installed, they cannot claim the ["x" dollars] payment under the proposed class action settlement.

Will eligible vehicles have any warranty on the Emission Modification?

Yes. Once the Emission Modification is performed, certain components will have an extended warranty for the greater of 4 years/48,000 miles from the date of installation of the Emission Modification or 10 years/120,000 miles from the initial sale date of the vehicle. This extended warranty remains with the vehicle and is fully transferable to subsequent owners until expiration. Where loaner vehicles are available, Dealers are requested to offer loaner vehicles to each Eligible Owner and Eligible Lessee at no cost where extended warranty repairs exceed three hours to complete.

Can Owners or Lessees be denied coverage under the Extended Warranty for the Emission Modification?

The Extended Warranty for the Emission Modification may be denied if an eligible vehicle has been altered with the use of any after-market emissions-related components, parts, and/or software, or with the removal of any original emissions-related components, parts, and/or software, and such alteration(s) are likely to substantially affect the operation of the vehicle with the Emission Modifications, until the owner of such vehicle, at his or her expense, has reversed the alteration(s) such that the Emission Modification will not be substantially affected.





Mercedes-Benz

Campaign No. 2020050005 October 2020

TO: ALL MERCEDES-BENZ CENTERS

SUBJECT: **Model GLK-Class diesel vehicles (X204 platform)**
Model Year 2014 - 2015
Modification to the emission control system

Mercedes-Benz USA, LLC ("MBUSA") is performing an emission campaign on certain GLK diesel vehicles in order to modify to the vehicles' emission control system. EPA and CARB have approved this emission modification for the MY14 - 15 GLK-Class (X204) diesel vehicles. An authorized Mercedes-Benz dealer will replace certain emission control system components and update certain software in the affected vehicles at no cost to the owner of the vehicle.

Prior to performing this Emission Campaign:

- Please check VMI to determine if the vehicle is involved in the emission modification campaign and if it has been previously repaired. Always Check VMI for any open campaigns, and perform accordingly.
- Please review the entire Emission Campaign bulletin and follow the repair procedure exactly as described.

Approximately 7,786 vehicles are involved.

Order No. P-EC-2020050005

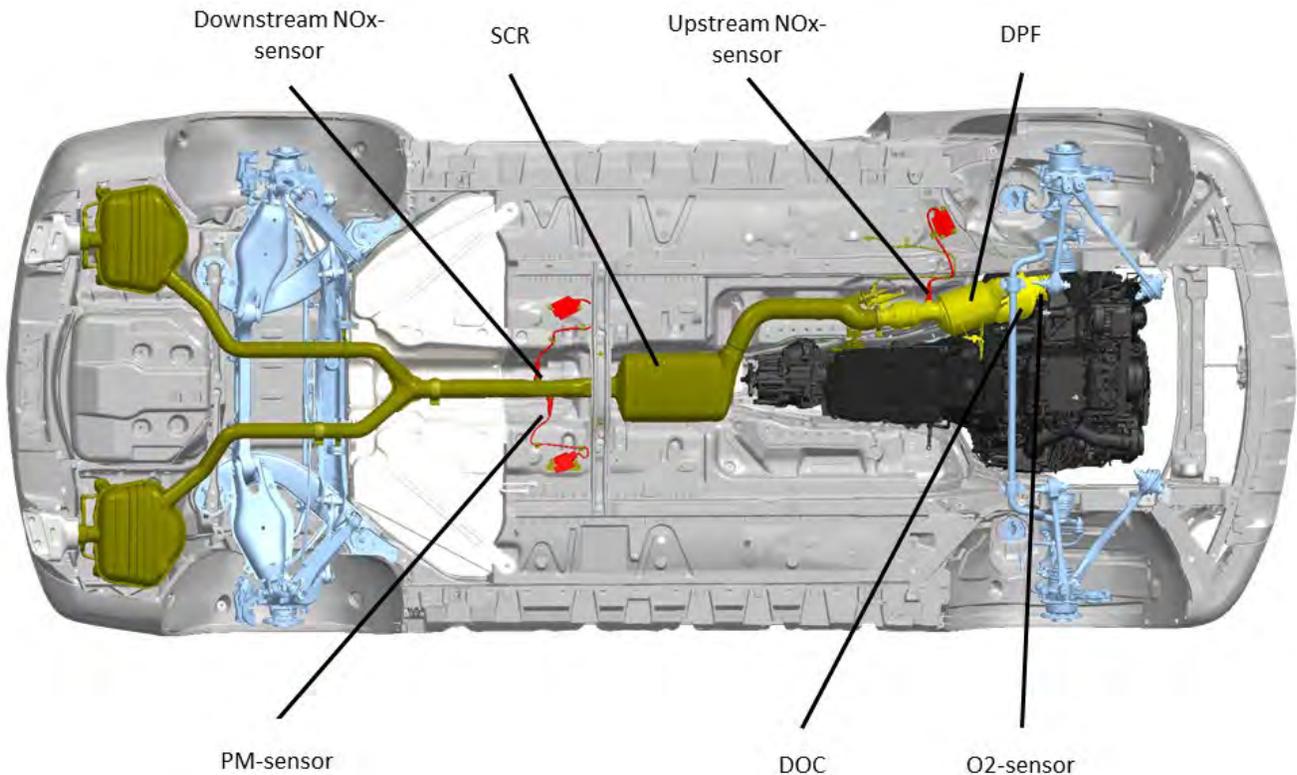
This bulletin has been created and maintained in accordance with MBUSA-SLP S423QH001, Document and Data Control, and MBUSA-SLP S424HH001, Control of Quality Records.

Scope of Work: **[Insert AKUBIS Video Course Code/QR-code]**

Work procedure

1. Initial Short Test and Initial Inspection
2. Disconnect Battery Ground
3. Replace Diesel Oxidation Catalyst (DOC)
4. Install end-cap to O2 sensor electrical harness
5. Install Plug for O2 sensor port on the DOC
6. Remove lower engine compartment trim
7. Replace NOx sensor and Particulate sensor control units downstream of the Selective Catalytic Reduction (SCR) catalyst
8. Loosen the wheel arch fairing and Replace NOx sensor control unit after the Diesel Particulate Filter (DPF)
9. Replace DPF
10. Replace SCR
11. Connect ground
12. Connect XENTRY diagnosis
13. Perform Xentry Procedure: Service Measure "Exhaust Aftertreatment System" (includes update of CDI, VGS, and SCR software)
14. Perform Final Short Test
15. Attach the adhesive label

Parts Overview



Procedure

1. Initial Short Test and Initial inspection

i Before starting the work procedure, an initial short test must be completed per below. Existing issues that would inhibit the installation of all software and hardware components outlined in this work procedure must be initially addressed.

1.2 Connect XENTRY diagnosis.

i Note:

- Use DAS/Xentry 06/20-with all associated patches or higher.
- Follow the steps exactly as described in DAS/Xentry.
- Connect battery charger (battery voltage  >12.5V).
- Ensure all electrical consumers are switched-off.
- In the event of software/SCN update issues, contact Star Diagnosis User Help Desk. Please refer to the “pre-call” check list before contacting UHD
- Refer to Star Diagnosis System (SDS) Best Practices Guide.

1.3 Perform Short Test

i Follow the Xentry procedure “Emission Modification Pre-Inspection”: “Control units view  N3/9 – Motor electronics ‘CR42’ for combustion engine ‘OM651 (CDI)  Special procedures  Emission Modification Pre-Inspection

Record findings on workorder and save to paperless

1.4 Initial Visual Inspection (Figure 1)

1.5 Disconnect XENTRY diagnosis and remove battery charger

Emissions Modification Pre-Inspection

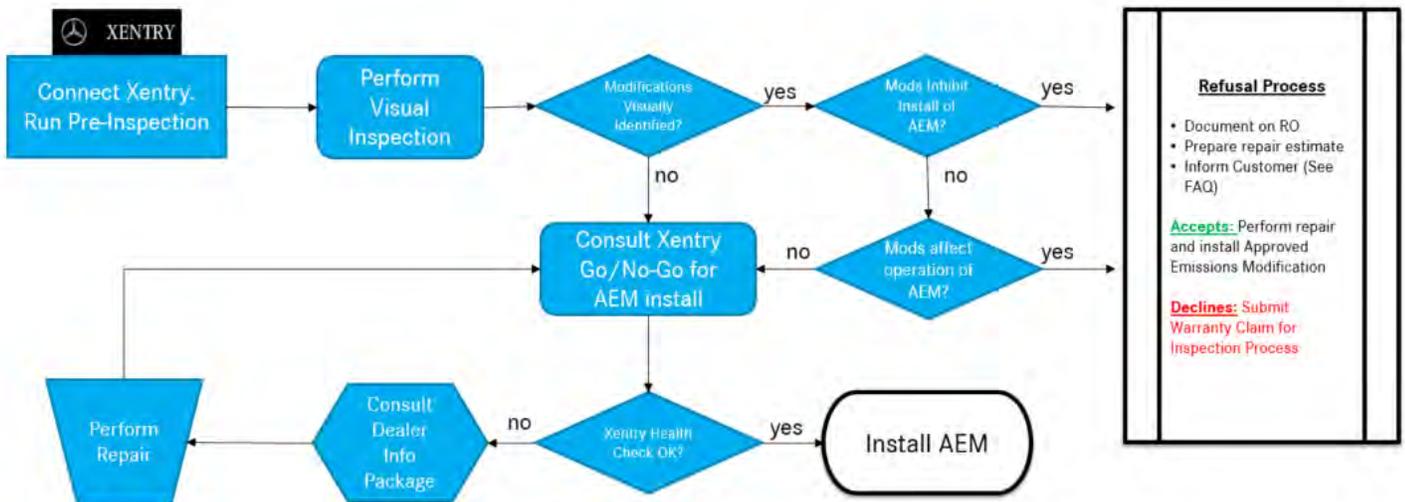


Figure 1

2. Disconnect battery ground (AR54.10-P-0003CW).

3. Replace DOC (AR49.10-P-55000MD).

i Engine control unit **does not** have to be removed from the air filter housing.

The air filter housing with engine control unit can be placed on top the engine with all lines connected (**Figure 2**).

i **Installation:** When reinstalling exhaust components, leave the mounting hardware loose until all exhaust components are in place. This will allow for flexibility when fitting the components together.



Figure 2

4. Install the electrical end-cap (A 000 545 40 39) (Figure 3) to the engine harness for the oxygen sensor.

i The electrical connection of the oxygen sensor **is no longer required!**

5. Install the plug (N 007 604 018 109) and seal (A 021 997 62 45) on the new DOC (**Hm** 50, Figure 4).

i Oxygen sensor is **no** longer required!

i Plug does **not** have to be lubricated with paste



Figure 3



Figure 4

6. Remove the lower engine compartment trim (middle and rear).



Basic data see **AR61.20-P-1105CY**.

Only loosen the rear underbody panelling (**right and left**) (**Figure 5**).



Loosen inner plastic nuts (**1, Figure 5**) to do this.

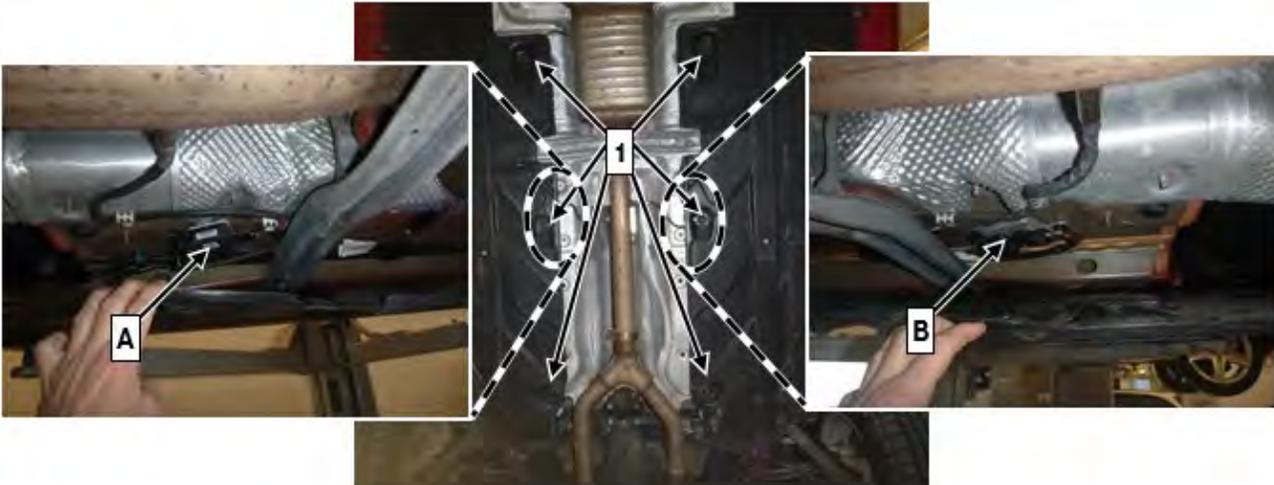


Figure 5

7. Release the NOx sensor (**A, Figure 5**) and particulate sensor (**B, Figure 5**) control units downstream of the SCR on the underbody (**AR14.40-P-2038CD**). The NOx sensor and particulate sensor control units will be replaced.



To do so, push the underfloor paneling downward slightly (**Figure 5**).



The NOx sensor and particulate sensor does **not** have to be removed from the old exhaust pipe.



The new sensors are already equipped with paste, hot lubrication.



The pigtail wire at NOx sensor should be cut for ease of removal and to ensure it is not reused.

8. Loosen the wheel arch fairing on the lower right in order to remove the NOx sensor control unit for the NOx sensor (**C, Figure 6**) after DPF (**AR14.40-P-2038CD**).



The NOx sensor is replaced.



The NOx sensor does **not** have to be unscrewed from the exhaust pipe.



The pigtail wire at NOx sensor should be cut for ease of removal and to ensure it is not reused.

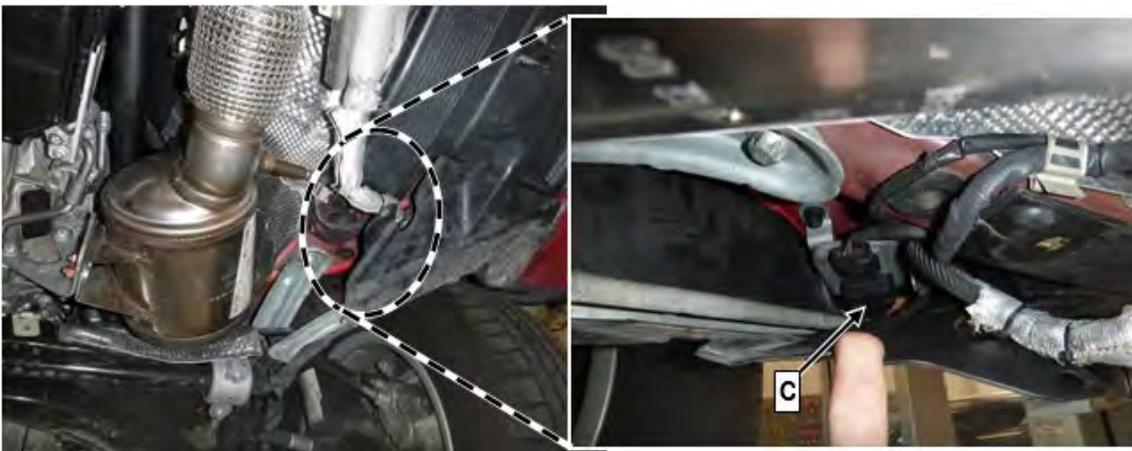


Figure 6

9. Replace **DPF (AR14.40-P-1000OMD)**.

If necessary, use old screw from the DPF clamp (which is longer) as an aid when reinstalling the new DPF clamp.

i Cut the pigtail wire at oxygen sensor for ease of removal and to ensure it is not reused.

10. Replace **SCR (AR49.10-P-7100CWI)**.

i Disconnect the exhaust system at the rear separation point before the muffler.
The muffler must **not** be removed.

i When reinstalling exhaust components leave the mounting hardware loose until all the exhaust components are in place. This will allow for flexibility when fitting the components together.

11. Reconnect battery ground (**AR54.10-P-0003CW**).

12. Connect XENTRY diagnosis. Update characteristics of the control unit

i **Note:**

- Use DAS/Xentry 6/20 with all associated patches or higher.
- Follow the steps exactly as described in DAS/Xentry.
- Connect battery charger (battery voltage  >12.5V).
- Ensure all electrical consumers are switched-off.
- In the event of software/SCN update issues, contact Star Diagnosis User Help Desk. Please refer to the "pre-call" check list before contacting UHD
- Refer to Star Diagnosis System (SDS) Best Practices Guide.

13. Perform Xentry procedure "Service Measure Exhaust Aftertreatment System"

i **i** To do so, select menu item "Control units view" → N3/9 – Motor electronics 'CR42' for combustion engine 'OM651 (CDI)' → Special procedures → Perform Service Measure "Exhaust aftertreatment system"

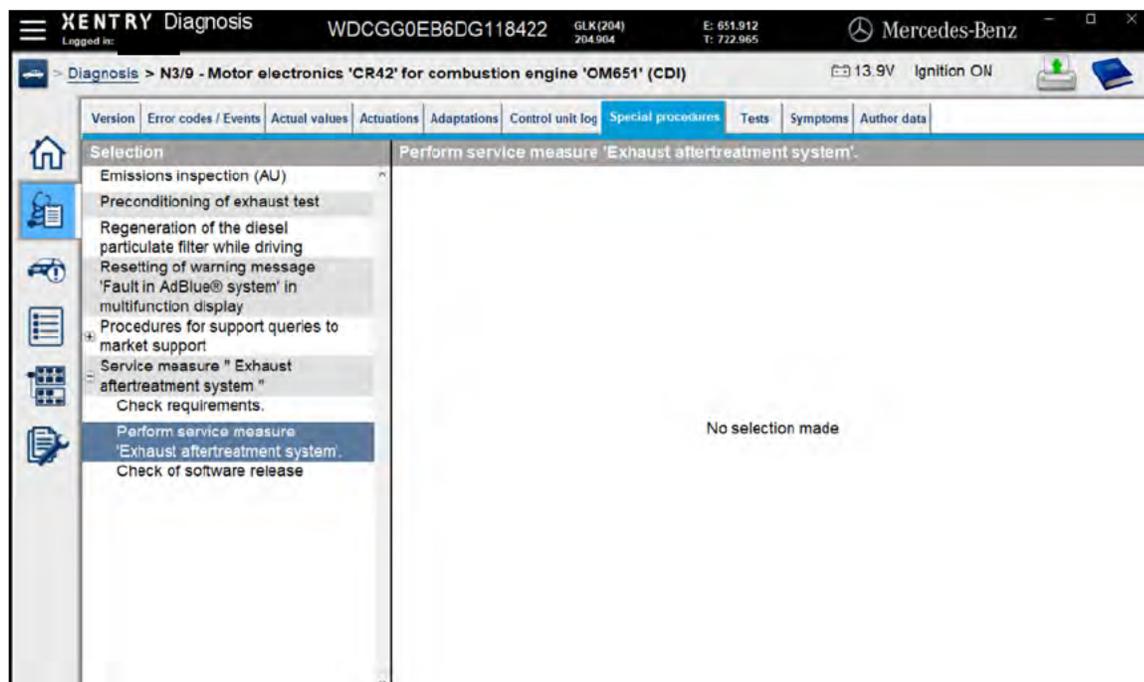


Figure 7

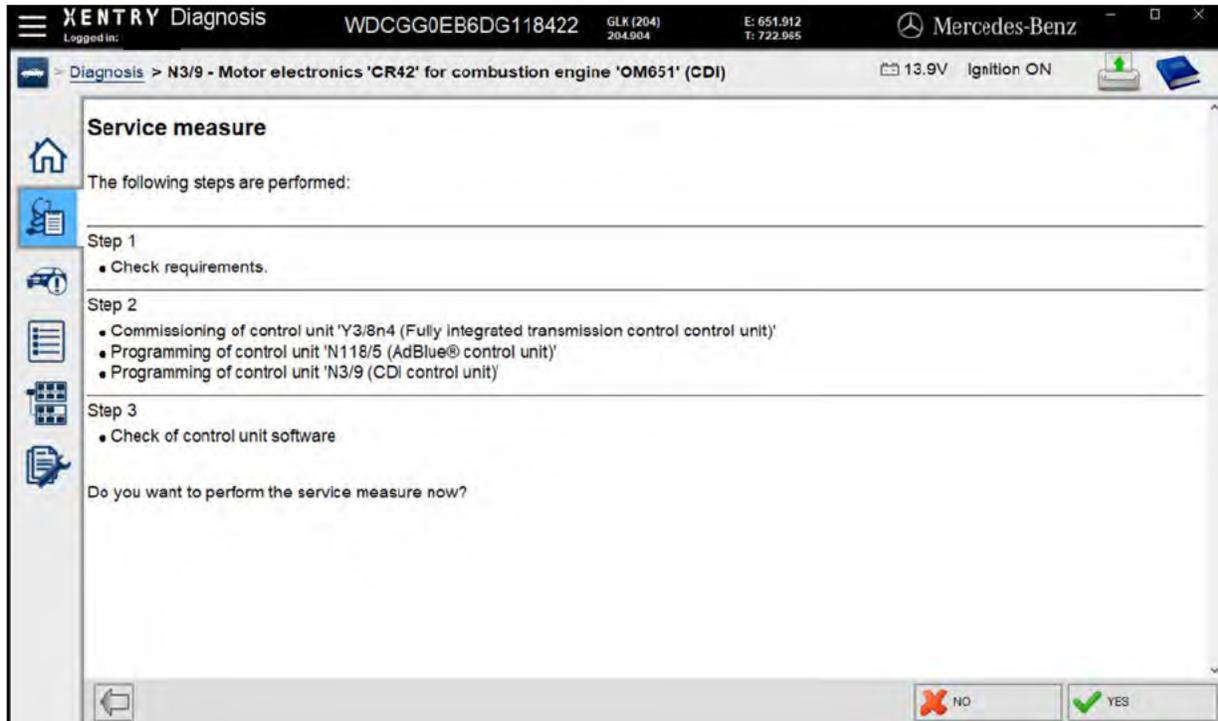


Figure 8

- i** Subsequently, follow the user guide in XENTRY diagnosis.
- i** Additional control units will be updated **automatically** in the background.
- i** Fill out emission label according to Xentry instructions

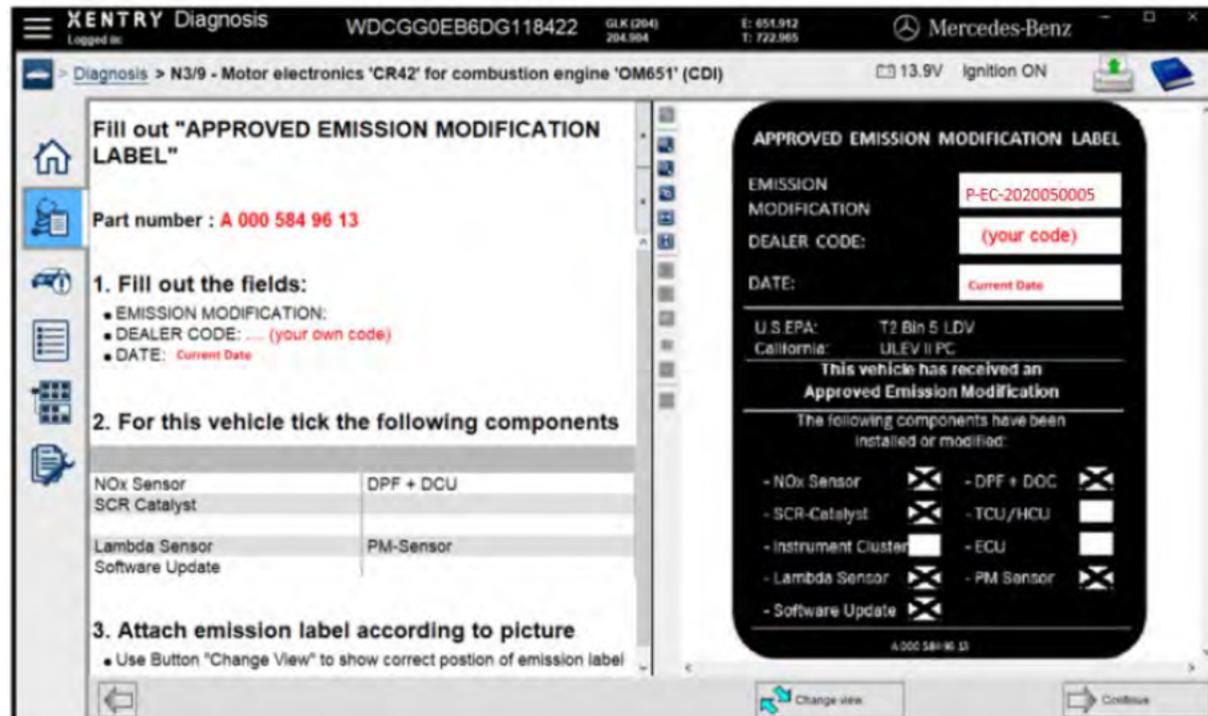


Figure 9

i Check screen will be shown at end of procedure.

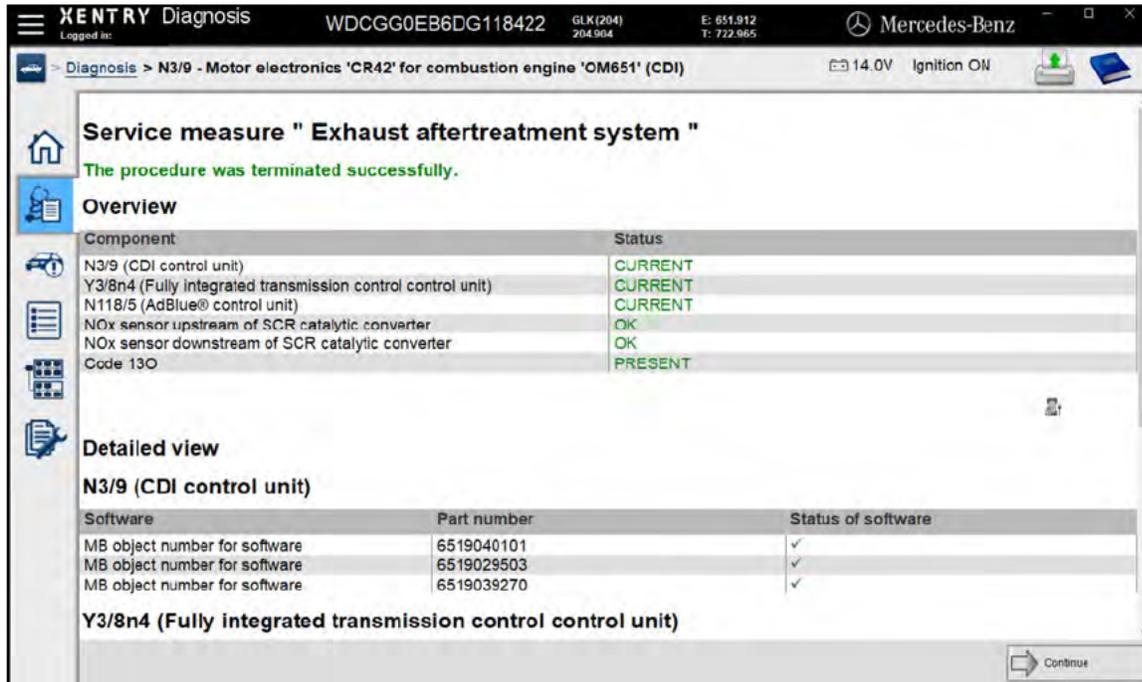


Figure 10

14. Perform a final quick test and transmit to paperless SDS.

- i** Faults stored in the memory, caused by disconnected lines during the inspections, must be deleted from the fault memory after completing the work.
- i** The procedure via the diagnostic system is shown on the following pages.
- i** If faults are present and stored they need to be addressed. Create a PTSS case

15. Clean the bonding surface of the hood and attach the adhesive label (Figure 12).

i The fields on the adhesive label must be filled out correctly. Please use black permanent marker. Refer to (Figure 9 within the Xentry procedure

i The adhesive label can be applied to the hood **while** updating the software for the engine control unit.

i **Failure to comply may result in dealer debit and/or possible fines.**



Figure 12

Primary Parts Information

Qty.	Part Name	Part Number
1	Part set (DPF)	A 204 490 04 00 85
1	Part kit (DOC)	A 204 490 05 00 85
1	SCR catalytic converter	A 204 490 01 00 80
1	Part kit (2 x NOX sensors, 1 PM sensor)	A 204 905 46 05 85
1	AEM Label (code 804/805)	A 000 584 96 13
1	Screw plug	N 007 604 018 109
1	Sectional sealing ring	A 021 997 62 45
1	Connector housing	A 000 545 40 39

i Small parts such as screws, stop nuts, sealing rings, cable ties, liquids, sealants, etc. that are not listed in the parts list. The small parts required (per WIS instruction) are included in the cost and can be claimed.

Warranty Information

Operation: Replace electrohydraulic control unit and components of the exhaust system

Includes: Carry out commissioning the Control units (CDI VGS, SCR) with XENTRY and affix AEM Label.

Damage Code	Operation Number	Labor Time (hrs.)
4992002	02-1378	5.1

 **Note** Operation labor times are subject to change

APPENDIX B

PROTOCOL FOR ASSESSMENT OF PROPOSED EMISSION MODIFICATION ("TEST PROTOCOL")

1. Test Vehicles. Defendants shall acquire for testing vehicles that meet the requirements of Paragraphs 1.a, 1.b, 1.c, and Attachment A.
 - 1.a. Acquisition. Defendants shall acquire Emission Plus Test Vehicles and OBD Demonstration Vehicles (collectively, "Test Vehicles") from individual consumers who advertised their vehicles for sale or from Dealers.
 - 1.b. Condition of and Changes to Emission Plus Test Vehicles and OBD Demonstration Vehicles.
 - 1.b.i. Defendants shall ensure all Test Vehicles are free of the defects set forth at 40 C.F.R. Part 86, Subpart S, Appendix II, "As-Received Testing Vehicle Rejection Criteria." If a defect under 40 C.F.R. Part 86, Subpart S, Appendix II, "As-Received Testing Vehicle Rejection Criteria" is discovered, Defendants shall reject the vehicle from use as a Test Vehicle.
 - 1.b.ii. Nothing in this Test Protocol precludes Defendants from testing or on-road driving of a vehicle to ensure that it is in good working order prior to commencing testing under this Test Protocol.
 - 1.b.iii. Subject to Paragraph 1.b.i, Defendants may acquire vehicles regardless of current configuration, provided that the vehicle conforms to the requirements of Paragraphs 1.a, 1.b, 1.c, and Attachment A.
 - 1.b.iv. Defendants shall obtain all records that are related to emission repairs and fluid maintenance for the Test Vehicle from internal systems and databases, including records of warranty repairs and customer-paid repairs, tester logs, and ECU data.
 - 1.b.v. Prior to selection of a vehicle as a Test Vehicle, Defendants shall make all repairs necessary to ensure proper functioning of the Test Vehicle. Defendants shall not replace a part that is properly functioning, if such part is on the CARB aftermarket approved parts list, or is made by Defendants or their suppliers. Defendants shall provide a written description of the repairs (including part replacements) and the reason for the repairs, in the Emission Modification Proposal Report.
 - 1.b.vi. After selection of a vehicle as a Test Vehicle, Defendants shall make all repairs necessary to ensure proper functioning of the Test Vehicle, or may choose to use a Secondary Vehicle in lieu of making repairs, as described in Paragraph 1.c.iv.B.2. Unless the Test Vehicle Malfunctions, Defendants shall not replace a part. Defendants shall

provide a written description of the repairs (including part replacements) and the reason for the repairs, and the justification and any relevant data, in the Emission Modification Proposal Report.

- 1.b.vii. For part replacements performed under Paragraphs 1.b.v or 1.b.vi, Defendants shall use a deteriorated part that has no less than half the Mileage of the vehicle at the time of the repair to replace any of the parts specified in Attachment K, except that: (1) for an Emission Plus Test Vehicle used for testing in the “A” configuration under Paragraph 2.c (A-to-B Testing), a new part shall be used for replacement of any part that will be exchanged during, or will not be used after, the installation of the proposed Emission Modification Configuration; (2) for an Emission Plus Test Vehicle used for testing under Paragraph 2.b (Emission, Special Cycle, and PEMS Testing) or an OBD Demonstration Vehicle, a bench-aged part shall be used for replacement of any part that is bench-aged pursuant to Paragraph 1.e.i; and (3) the requirement to use deteriorated parts shall not apply to parts like seals, gaskets, screws, or clamps (installation materials).
- 1.b.viii. At any time, Defendants shall conduct any routine maintenance covered by the applicable owner’s manual and Mercedes-Benz Service Sheets to ensure proper functioning of a Test Vehicle, provided that Defendants provide a written description of the maintenance and the reason for the maintenance in the Emission Modification Proposal Report.
- 1.b.ix. Defendants may install a development ECU, known as an ETK, on a Test Vehicle, except that Defendants shall not use an ETK during PVE testing conducted in accordance with the requirements of 13 C.C.R. §§ 1968.2(j)(1) or (j)(2) (2016) as modified by this Test Protocol.
- 1.b.x. Defendants may make modifications necessary to operate an all-wheel drive vehicle on a two-wheel drive dynamometer for Standard Road Cycle aging and/or stabilization as described under Paragraph 1.e. Prior to commencing any testing pursuant to Paragraph 2 of this Test Protocol, the Test Vehicle shall be returned to the all-wheel drive configuration and remain so configured until testing is completed, and Defendants shall test such Test Vehicle on an all-wheel drive dynamometer.

1.c. Secondary Vehicles.

- 1.c.i. If any Test Vehicle Malfunctions during testing under this Test Protocol, Defendants shall have at least one Secondary Emission Plus Test Vehicle available for each Emission Modification Category 4–12, and one Secondary OBD Demonstration Vehicle available for OBD Clusters 2 - 5. The Secondary OBD Demonstration Vehicle may be used for driver inducement demonstration under Paragraph 2.d.iii independently of its designation as a Secondary Vehicle (i.e., without necessitating a

Malfunction of the initial OBD Demonstration Vehicle).

- 1.c.ii. Secondary Vehicles shall also meet the requirements of Paragraph 1.a, 1.b, and Attachment A.
- 1.c.iii. Nothing in this Test Protocol prohibits Defendants from obtaining additional Secondary Vehicles as needed. Defendants specifically reserve the ability to obtain one additional Emission Plus Test Vehicle for PVE testing for any OBD Cluster where PVE testing is required. Failure to have a Secondary Vehicle available to timely meet the requirements of this Test Protocol shall not constitute force majeure pursuant to Section XI (Force Majeure) of the Consent Decree.
- 1.c.iv. Upon a Malfunction of a Test Vehicle during aging and stabilization under Paragraph 1.e, or during testing under this Test Protocol, Defendants shall follow the procedure set forth in this Paragraph.
 - 1.c.iv.A. First, stop testing the vehicle and determine the reason for the Malfunction.
 - 1.c.iv.B. Second, Defendants may elect to repair the vehicle consistent with Paragraph 1.b.vi and continue testing, or restart testing using a Secondary Vehicle.
 - 1.c.iv.B.1. If Defendants elect to repair the vehicle, the repairs shall be reported to EPA/CARB in accordance with Paragraphs 4.a.i.I and 4.a.xvi of this Test Protocol.
 - 1.c.iv.B.2. If Defendants elect to switch to a Secondary Vehicle, Defendants shall:
 - 1.c.iv.B.2.a. Conduct each of the following on a single Emission Plus Test Vehicle (1) all emission testing except special cycle testing required under Paragraph 2.b.i, and (2) both the “A” and “B” portions of the testing required under Paragraph 2.c.i (Fuel Economy), Paragraph 2.c.ii (NVH), or Paragraph 2.c.iii (Drivability).
 - 1.c.iv.B.2.b. If retaining any test results generated prior to switching to the Secondary Vehicle, provide an engineering justification explaining why the retained test results are not

impacted by the Malfunction. Defendants may retain test results from an OBD Demonstration Vehicle in lieu of restarting and conducting all OBD demonstration testing required under Paragraph 2.d.i on a Secondary OBD Demonstration Vehicle if and only if the following conditions are met with respect to the OBD Demonstration Vehicle that malfunctioned and the Secondary OBD Demonstration Vehicle: (1) Defendants perform SCR efficiency and EGR low flow monitoring demonstrations on both vehicles, (2) the calibration set is the same on both vehicles, (3) both vehicles are the same Model and MY, and (4) the Mileage on the Secondary OBD Demonstration Vehicle is within 5,000 miles of the OBD Demonstration Vehicle that Malfunctioned at the time Defendants begin testing the Secondary OBD Demonstration Vehicle.

1.c.iv.C. Third, collect all data required (for each Secondary Emission Plus Test Vehicle, for each Emission Plus Test Vehicle, and for each Secondary OBD Demonstration Vehicle, for an OBD Demonstration Vehicle), for each test, and document the Malfunction, including an explanation of the reason for the Malfunction and its impact on the test results, in accordance with the requirements of Paragraphs 4.a.i.J, 4.a.i.M and 4.a.xvii of this Test Protocol.

1.d. Switching to the Proposed Emission Modification Configuration. Upon the completion of the “A” configuration testing set forth in Paragraph 2.c for each Emission Plus Test Vehicle undergoing A-to-B testing, prior to the commencement of testing set forth in Paragraph 2.b (Emission, Special Cycle, and PEMS Testing) for each Emission Plus Test Vehicle undergoing such testing, prior to the commencement of testing set forth in Paragraph 2.d.ii (PVE Testing) or Paragraph 2.d.iii (Demonstration of Driver Inducement Strategies) for each Emission Plus Test Vehicle undergoing such testing, and prior to the commencement of testing set forth in Paragraph 2.d.i (OBD demonstration testing), Paragraph 2.d.ii (PVE Testing) or Paragraph 2.d.iii (Demonstration of

Driver Inducement Strategies) for each OBD Demonstration Vehicle used for demonstrations or testing conducted under Paragraph 2.d, Defendants shall modify the Test Vehicle as follows:

- 1.d.i. Defendants shall make all hardware changes for that Emission Modification Category specified in Attachment I. Defendants shall not make any further hardware or software changes once the testing of the proposed Emission Modification Configuration specified in Paragraph 2 begins. This does not preclude Defendants from repairing vehicles that experience a Malfunction as described in Paragraph 1.c.iv after the Emission Modification Configuration is installed, carrying out repairs or scheduled maintenance as permitted by Paragraphs 1.b.vi through 1.b.viii, modifying a Test Vehicle in connection with testing conducted under Paragraphs 2.d.ii (PVE Testing) or 2.d.iii (Demonstration of Driver Inducement Strategies), or modifying an OBD Demonstration Vehicle in connection with an OBD demonstration as described in Paragraphs 2.d.i (OBD Demonstration).
- 1.d.ii. Defendants shall reflash the affected control units of the respective Emission Modification Category as listed in Attachment I, altering their software calibrations to the proposed Emission Modification Configuration for that Emission Modification Category. Each proposed Emission Modification Configuration shall not include any Defeat Devices and shall include only those AECDs contained in the Updated AECD Document for the relevant Emission Modification Category, as those AECDs are described in that document.
- 1.d.iii. Defendants shall adjust the calibration of the software installed in each Test Vehicle in a manner consistent with the proposed Emission Modification Configuration, to carry over relevant information from the previous control unit or control units as necessary, and to make adjustments to reflect the age of the Test Vehicle based on its accumulated Mileage and bench-aging conducted pursuant to Paragraph 1.e. Defendants shall not make any further software changes once the testing of the proposed Emission Modification Configuration begins, except as allowed under Paragraph 1.d.iv.
- 1.d.iv. Nothing in this Paragraph 1.d shall prevent Defendants from modifying an OBD Demonstration Vehicle consistent with this Test Protocol in order to conduct an OBD demonstration required under this Test Protocol and return the vehicle to normal operating conditions after the OBD demonstration, as permitted by 13 C.C.R. § 1968.2 (2016) or this Test Protocol. This includes mounting and dismounting threshold parts, adjusting calibration values where it is justified in the OBD Interim Report pursuant to Paragraph 3.a.iv that there is no other method to simulate faults, and restoring the initial values after conducting an OBD demonstration test case.

- 1.e. Aging and Stabilization. Defendants shall age and stabilize the Test Vehicles as required in Paragraphs 1.e.i, 1.e.ii, and 1.e.iii. The Aftertreatment System for the Emission Plus Test Vehicle used for testing under Paragraphs 2.c.i (A-to-B Fuel Economy Testing), 2.c.ii (A-to-B NVH Testing), or 2.c.iii (A-to-B Drivability Testing) shall not be bench-aged, and shall be installed in the condition and manner that Defendants shall install the proposed Emission Modification Configuration on a customer vehicle, to reflect the customer experience following installation of an Approved Emission Modification. The bench- and whole-vehicle aging requirements of this Test Protocol are detailed in the table below.

Test Type	Vehicle Type	ATS Age for Testing Proposed EMC	SRC Whole-Vehicle (Engine) Aging Required
Paragraph 2.b Emission and Special Cycle Testing, PEMS testing	Emission Plus Test Vehicle	Emission Modification Categories 4–8 and 11–12: ATS bench-aged from new to either: <ul style="list-style-type: none"> FUL minus median mileage, but at least 170 regenerations (50,000 miles), or 400 regenerations FUL equivalent for LEV II. Emission Modification Category 3: ATS bench-aged from new to 500 regenerations FUL equivalent for LEV III.	No
Paragraph 2.c.i Fuel economy A-to-B testing	Emission Plus Test Vehicle	No bench-aging requirement, for any Emission Modification Category.	No
Paragraphs 2.c.ii and 2.c.iii NVH and drivability A-to-B testing	Emission Plus Test Vehicle	No bench-aging requirement, for any Emission Modification Category.	No
Paragraph 2.d.i OBD Demonstration	OBD Demonstration Vehicle	Bench-aged from new to 400 regenerations FUL equivalent for LEV II (OBD Clusters 3–5) or 500 regenerations FUL equivalent for LEV III (OBD Cluster 2)	Yes, to FUL

Test Type	Vehicle Type	ATS Age for Testing Proposed EMC	SRC Whole-Vehicle (Engine) Aging Required
Paragraph 2.d.ii PVE testing	Emission Plus Test Vehicle or OBD Demonstration Vehicle	No bench-aging requirement, for any Emission Modification Category, if using an Emission Plus Test Vehicle. Defendants have the option to bench-age pursuant to Paragraph 2.b., at their discretion, and they may use an OBD Demonstration Vehicle.	No
Paragraph 2.d.iii SCR inducement strategy	Emission Plus Test Vehicle or OBD Demonstration Vehicle	No bench-aging requirement, for any Emission Modification Category, if using an Emission Plus Test Vehicle. Defendants have the option to bench-age pursuant to Paragraph 2.b., at their discretion, and they may use an OBD Demonstration Vehicle.	No

1.e.i. Bench-Aging. Defendants shall bench-age the Aftertreatment System of each Emission Plus Test Vehicle used for Paragraph 2.b testing and each OBD Demonstration Vehicle using the process specified in Paragraph 1.e.i.A, for the total regeneration cycles identified in Paragraph 1.e.i.B and in each Updated AECD Document. All vehicles required to have a bench-aged Aftertreatment System shall receive an Aftertreatment System that has been bench-aged from new to the target aging point.

1.e.i.A. Bench-Aging Process.

- 1.e.i.A.1. The bench-aging process shall include repeat cycles of high temperature, emulating degradation of the Aftertreatment System as a result of DPF Regeneration Events, conducted according to the following phases and conditions.
- 1.e.i.A.2. The aging cycle shall consist of repetitions of five different operating points. The approximate aging cycle duration and target engine speed, target temperature upstream of the DPF, and target engine torque at each operating point shall be specified in an appendix to the Updated AECD Document for Emission Modification Categories 3–12, in the form and content specified in an appendix of the Updated AECD Document for Emission Modification Category 9. Normal Mode, Regeneration Mode and Cooling Phase shall occur

at each of the five operating points.

1.e.i.A.3. In the event an aging cycle is aborted before all five operating points are completed, the aging cycle shall start again from Operating Point 1, and Defendants shall provide test sequence data for each aborted aging cycle in the proposed Emission Modification Report.

1.e.i.A.4. The Emission Plus Test Vehicles for Emission Modification Categories 9 and 10 shall be bench-aged as specified in the proposed Emission Modification Proposal Reports and Updated AECD Documents for those respective Emission Modification Categories.

1.e.i.B. Total Regeneration Cycles Required in Bench-Aging Process and Bench-Aging Equivalent Mileage. The total number of regeneration cycles required for FUL equivalency shall be consistent with the table below Paragraph 1.e.

1.e.i.B.1. Any target for bench-aging equivalent mileage below FUL shall be calculated on a linear basis and rounded to the nearest whole number divisible by five.

1.e.i.B.2. For Emission Plus Test Vehicles for Emission Modification Categories 4–8 and 11–12, the minimum bench-aging equivalent mileage shall be the difference between FUL for the relevant Emission Plus Test Vehicle and the applicable median mileage in Table 1, Attachment A, with the exception that a minimum of 170 regenerations (the number of regeneration cycles for 50,000 miles of Bench-Aging Equivalent Mileage) shall be achieved and specified in the Updated AECD Document for each Category.

1.e.i.B.3. For Emission Plus Test Vehicles for Emission Modification Category 3, the minimum bench-aging equivalent mileage shall be the FUL for LEV III and shall be specified in the Updated AECD Document for Emission Modification Category 3.

1.e.ii. Accelerated OBD Demonstration Vehicle Aging. For OBD Clusters 2–5, Defendants shall obtain a high-mileage OBD Demonstration Vehicle as described in Table 2, Attachment A to this Test Protocol. Defendants

shall accumulate the remaining mileage up to FUL using the Standard Road Cycle. In the case of OBD Clusters 3–5, Defendants shall then install in the OBD Demonstration Vehicle an Aftertreatment System bench-aged to FUL in accordance with Paragraph 1.e.i. In the case of OBD Cluster 2, Defendants shall have the option to retain the existing Aftertreatment System on the OBD Demonstration Vehicle as long as the vehicle, including the Aftertreatment System, has at least 110,000 miles, or to age the vehicle and the Aftertreatment System to 110,000 miles or more.

- 1.e.iii. Stabilization. After bench-aging the Aftertreatment System as required in Paragraph 1.e.i, Defendants shall install the bench-aged Aftertreatment System on the Emission Plus Test Vehicle or OBD Demonstration Vehicle utilized for testing pursuant to Paragraph 2.b or Paragraph 2.d, and operate the vehicle for a stabilization period of at least 1,500 miles of the SRC or on-road driving. The Emission Plus Test Vehicle utilized for A-to-B testing pursuant to Paragraph 2.c shall not be bench-aged; however, Defendants shall operate the vehicle for a stabilization period consisting of up to 500 miles of the SRC or on-road driving after installation of the proposed Emission Modification Configuration. If Defendants elect to use an Emission Plus Test Vehicle for PVE testing pursuant to Paragraph 2.d.ii, Defendants shall operate the vehicle for a stabilization period consistent with the requirements above for a vehicle used for testing pursuant to Paragraph 2.b or a vehicle used for A-to-B testing pursuant to Paragraph 2.c, and Defendants have the option to bench-age the Aftertreatment System prior to the stabilization period.

2. Assessment Testing. For each Emission Modification Category 4–12, Defendants shall test one vehicle per Emission Modification Category (the “Emission Plus Test Vehicle 1”) for the emission, special cycle and PEMS tests described in Paragraph 2.b, and one separate vehicle (the “Emission Plus Test Vehicle 2”) per Emission Modification Category for A-to-B fuel economy testing described in Paragraph 2.c.i.¹ For each of Emission Modification Categories 4–7, 9–10, and 12, Defendants shall perform A-to-B NVH and drivability testing as described under Paragraphs 2.c.ii and 2.c.iii on either Emission Plus Test Vehicle 2 or an additional Emission Plus Test Vehicle 3. The “A” and “B” portions of any A-to-B test comparison conducted under Paragraph 2.c.i (A-to-B Fuel Economy Testing), 2.c.ii (A-to-B NVH Testing), or 2.c.iii (A-to-B Drivability Testing) shall be performed on the same Emission Plus Test Vehicle. Defendants shall test one OBD Demonstration Vehicle per OBD Cluster as described in Paragraph 2.d, except as modified by Paragraph 2.d.i.G, and Defendants may use an Emission Plus Test Vehicle for PVE testing required under Paragraph 2.d.ii or for

¹ The tests described in Paragraphs 2, 2.b and Paragraph 2.c.i. are summarized in a table in Attachment F. In the event of any discrepancy between Attachment F and the text of Paragraphs 2, 2.b and 2.c.i, the text in the Paragraphs shall be followed.

inducement testing required under Paragraph 2.d.iii.

2.a. Requirements for Assessment Testing.

2.a.i. DPF Regeneration. Defendants shall only manually trigger a DPF Regeneration Event as permitted in Paragraphs 2.a.i.C, 2.c.i, 2.c.ii (and Attachment G), 2.c.iii (and Attachment H) of this Test Protocol. Defendants shall not manually trigger a DPF Regeneration Event in testing conducted under Paragraph 2.b.i (Emission and Special Cycle Testing) or Paragraph 2.b.ii (PEMS Testing). Defendants shall manually trigger a DPF Regeneration before the FTP 72 Prep Cycle used as preconditioning for Test Loop 1 for testing conducted under each of the “A” configuration and the “B” configuration testing under Paragraph 2.c.i (A-to-B Fuel Economy Testing). Defendants shall manually trigger a DPF Regeneration during NVH testing in accordance with the procedures in Paragraph 2.c.ii (and Attachment G), and during drivability testing in accordance with the procedures in Paragraph 2.c.iii (and Attachment H).

2.a.i.A. Imminent DPF Regeneration Event. If a Regeneration Event is imminent prior to the start of a FTP 72 Prep Cycle; Test Loop or any single test pursuant to Paragraph 2.b.i (Emission and Special Cycle Testing) or Paragraph 2.c.i (A-to-B Fuel Economy Testing); or test series or single test pursuant to Paragraph 2.b.ii (PEMS Testing), Defendants shall drive the vehicle on the road or perform multiple back-to-back runs of the FTP 72, HWFET, or US06 to allow the DPF Regeneration Event to complete naturally before Defendants commence a FTP 72 Prep Cycle or a test pursuant to Paragraph 2.b.i (Emission and Special Cycle Testing), Paragraph 2.b.ii (PEMS Testing), or Paragraph 2.c.i (A-to-B Fuel Economy Testing).

2.a.i.B. DPF Regeneration Event Occurrence. If a DPF Regeneration Event occurs, either during a FTP 72 Prep Cycle or test pursuant to Paragraph 2.b (Emission, Special Cycle, and PEMS Testing) or 2.c (A-to-B Testing), Defendants shall complete the FTP 72 Prep Cycle or test to allow the DPF Regeneration Event to complete naturally. If the DPF Regeneration Event does not complete naturally on the FTP 72 Prep Cycle or test, Defendants shall drive the vehicle on the road or perform multiple back-to-back runs of the FTP 72, HWFET, or US06 to allow the DPF Regeneration Event to complete naturally. If a DPF Regeneration Event occurs during a PEMS test pursuant to Paragraph 2.b.ii, Defendants shall either complete the test route or extend the test route to allow the DPF Regeneration Event to complete naturally. Defendants shall invalidate any FTP 72 Prep Cycle or test pursuant to Paragraphs 2.b (Emission, Special Cycle, and PEMS Testing) or 2.c (A-to-B

Testing) in which a DPF Regeneration Event occurs during the test, and the test shall not be counted toward the number of tests Defendants must complete pursuant to Paragraph 2.b (Emission, Special Cycle, and PEMS Testing) or Paragraph 2.c (A-to-B Testing).

2.a.i.C. DPF Regeneration Events During OBD Demonstration.

Defendants shall only manually trigger a DPF Regeneration Event during OBD Demonstration as permitted in this Paragraph 2.a.i.C. Defendants are permitted to manually trigger a DPF Regeneration Event during OBD testing under the following circumstances:

(1) when a DPF regeneration is necessary for OBD IRAF determination; (2) as part of a test case during OBD demonstration or PVE testing where a DPF regeneration is needed to demonstrate the monitor (for example, demonstration of the DPF monitor); and (3) as part of the workshop procedure to return a vehicle to normal operating condition following an OBD demonstration test case. For (3), a list of these monitors shall be included for EPA/CARB approval in the OBD Interim Report. If a DPF Regeneration Event is imminent prior to the start of an OBD demonstration or PVE test, and a manually triggered DPF regeneration is not authorized as described in this Paragraph 2.a.i.C, Defendants shall drive the vehicle on the road or perform multiple back-to-back runs of the FTP 72, HWFET, or US06 to allow the DPF Regeneration Event to complete naturally before Defendants commence the OBD demonstration or PVE test. If a DPF Regeneration Event that is not part of the OBD demonstration or PVE test takes place during such a demonstration or test, Defendants shall complete the demonstration/test to allow the DPF Regeneration Event to complete naturally. If the DPF Regeneration Event does not complete naturally on the demonstration/test, Defendants shall drive the vehicle on the road or perform multiple back-to-back runs of the FTP 72, HWFET, or US06 to allow the DPF Regeneration Event to complete naturally, and then restart the OBD demonstration or PVE test that was interrupted by the DPF Regeneration Event. Defendants shall invalidate and redo any OBD demonstration or PVE test in which a DPF Regeneration Event that was not part of IRAF determination or the planned test case occurs during the test/demonstration.

2.a.ii. FTP 72 Prep Cycle. For each FTP 75 test (at any temperature) conducted under Paragraph 2, Defendants shall conduct a single FTP 72 drive cycle as the Prep Cycle (“FTP 72 Prep Cycle”) followed by the “soak” period required under 40 C.F.R. Part 86, Subpart B before commencing with the emission test. Defendants shall collect the data, for each FTP 72 Prep Cycle, required in Paragraphs 4.a.i.B and 4.a.vi of this Test Protocol.

- 2.a.iii. Testing Mode. For any vehicle with a user-selectable drivability or transmission mode, Defendants may test under this Test Protocol in the predominant mode or any other mode, and EPA/CARB may conduct confirmation testing pursuant to Paragraph 5.b in any mode, regardless of the mode Defendants used for testing.
- 2.a.iv. Test Data Validity. Testing conducted, or associated data collected, pursuant to this Test Protocol, is invalid only in the following circumstances: a Test Vehicle Malfunctions; a DPF Regeneration Event occurs that was not part of the OBD IRAF determination or as part of a test case during OBD demonstration or PVE testing where a DPF Regeneration Event is needed to demonstrate the monitor; or a problem, other than with the vehicle, prevents the completion of testing in accordance with 40 C.F.R. Part 86 or 1066 as modified by this Test Protocol. All data from a Test Vehicle, including data gathered during one of the circumstances listed in the previous sentence, shall be submitted by Defendants as required under Paragraph 4 of this Test Protocol, and/or retained by Defendants as required by Paragraph 65 of this Consent Decree.
- 2.a.v. Special Cycles. Special cycles shall be performed in accordance with the procedures in Paragraph 2 and Attachment C. Where the requirements of 40 C.F.R. Part 1066 contradict a requirement of this Paragraph or Attachment C with regard to the special cycles, the provisions in this Test Protocol shall govern. Otherwise, the procedures in 40 C.F.R. Part 1066 shall be followed. Nothing in this Paragraph is intended to require Defendants to comply with procedures set forth in 40 C.F.R. Part 1066 with respect to data validation: specifically, 40 C.F.R. §§ 1066.101(b)(3) & 130. Defendants shall comply with the procedures in 40 C.F.R. Part 86, Subpart B, with respect to data validation.
- 2.b. Emission, Special Cycle, and PEMS Testing. For Emission Modification Categories 4–12, Defendants shall follow the requirements of Paragraph 2.a and perform the assessment tests set forth below in Paragraphs 2.b.i and 2.b.ii.
 - 2.b.i. Emission and Special Cycle Testing. For each Emission Plus Test Vehicle 1, after switching to the proposed Emission Modification Configuration, Defendants shall conduct the FTP 75, HWFET, US06, and SC03 emission tests a total of three times per test. Defendants shall conduct the FTP 75 emission test an additional one time at an ambient temperature of 20° Fahrenheit. Defendants shall conduct one of each of the special cycles listed in Attachment C. Defendants shall collect the data, for each test, required in Paragraphs 4.a.i.B and 4.a.vi of this Test Protocol. Tests shall be conducted in accordance with 40 C.F.R. Part 86, Subpart B, and 40 C.F.R. Part 1066, except as provided in Paragraph 2.a and Attachment C. Nothing in this Paragraph is intended to require Defendants to comply with procedures set forth in 40 C.F.R. Part 1066

with respect to data validation: specifically, 40 C.F.R. §§ 1066.101(b)(3) & 130.²

2.b.ii. PEMS Testing. For each Emission Plus Test Vehicle 1, after switching to the proposed Emission Modification Configuration, Defendants shall conduct PEMS tests over the Combined Freeway and Uphill/Downhill Route and the Urban/Downtown Los Angeles Route, specified in Attachment D. Defendants shall collect the data, for each test, required in Paragraphs 4.a.i.B and 4.a.vii of this Test Protocol.

2.b.ii.A. Multiple PEMS tests on one Emission Plus Test Vehicle may be conducted in the same Day.

2.b.ii.B. The first PEMS test on each Day shall be started after a soak of at least 6 hours. The Emission Plus Test Vehicle may be parked outdoors in Los Angeles for the soak period, or indoors at an ambient temperature of between 68°F and 86°F.

2.b.ii.C. If it is not possible to park the vehicle at the start of the PEMS route for the soak period, the vehicle may be cold-started at another location, provided that the emissions results and PEMS data are collected from engine-on and a map of the route is provided along with the results in the Emission Modification Proposal Report. The portion of the drive from the cold start to the start of the PEMS route will be considered an additional route segment for purposes of Paragraph 4.a.vii.

2.c. A-to-B Testing. Defendants shall follow the requirements of Paragraph 2.a and perform the assessment tests set forth below in Paragraph 2.c.i for Emission Modification Categories 4–12, and perform the assessment tests set forth below in Paragraphs 2.c.ii and 2.c.iii for Emission Modification Categories 4–7, 9–10, and 12. For testing under this Paragraph 2.c, Defendants shall conduct testing before and after installation of the proposed Emission Modification Configuration (“A-to-B” testing). The condition of the Emission Plus Test

² If any individual test within a row and identified by a letter in Attachment F is invalidated as described in Paragraph 2.a.iv, Defendants may perform a single test to replace the invalidated test, provided that: (1) Defendants shall perform the test that immediately precedes it as preconditioning for the replacement test, (2) the DPF soot load at the start of the replacement test must be within 1.5 g/l of the soot load at the start of the invalidated test, (3) the ammonia load at the start of the replacement test must be within 10 percent of the total estimated grams of stored ammonia load at the start of the invalidated test, and (4) the vehicle start temperatures (including engine coolant temperature, engine oil temperature, after-treatment temperatures for DOC, DPF, and SCR) must be within a similar operating range at the start of the invalidated test. Otherwise, Defendants shall repeat all tests prior to the invalidated test specified in the same row and identified by a letter in Attachment F as the invalidated test to obtain a valid replacement test.

Vehicle before switching to the proposed Emission Modification Configuration is the “A” configuration, and the condition after switching to the proposed Emission Modification Configuration is the “B” configuration.

2.c.i. A-to-B Fuel Economy Testing.

2.c.i.A. Defendants shall conduct fuel economy testing before and after installation of the proposed Emission Modification Configuration (“A-to-B” testing). For each Emission Plus Test Vehicle 2, in each of the “A” configuration and “B” configuration, Defendants shall determine the fuel economy of the vehicle by conducting the FTP 75, HWFET, US06, and SC03 emission tests a total of three times per test. Defendants shall repeat the FTP 75 emission test an additional one time in each of the “A” and “B” configurations at an ambient temperature of 20° Fahrenheit. Tests shall be conducted in accordance with 40 C.F.R. Part 86, Subpart B, and 40 C.F.R. Part 1066, except as provided in Paragraph 2.a. Nothing in this Paragraph is intended to require Defendants to comply with procedures set forth in 40 C.F.R. Part 1066 with respect to data validation: specifically, 40 C.F.R. §§ 1066.101(b)(3) & 130.

2.c.i.B. Defendants shall calculate the combined 5 cycle fuel economy for the Emission Plus Test Vehicle 2 consistent with 40 C.F.R. Part 600, and the requirements of Paragraph 4.a.i.C of this Test Protocol.

2.c.ii. A-to-B Noise, Vibration, and Harshness (“NVH”) Testing. Defendants shall conduct NVH testing before and after installation of the proposed Emission Modification Configuration (“A-to-B” testing) for a designated Emission Plus Test Vehicle in each of Emission Modification Categories 4–7, 9–10, and 12. The results for NVH testing of Emission Modification Category 7 shall apply to Emission Modification Categories 7 and 8, and the results for NVH testing of Emission Modification Category 10 shall apply to Emission Modification Categories 10 and 11. Defendants shall perform the NVH testing in accordance with the procedures in Attachment G.

2.c.iii. A-to-B Drivability Testing. Defendants shall conduct drivability testing before and after installation of the proposed Emission Modification Configuration (“A-to-B” testing) for a designated Emission Plus Test Vehicle in each of Emission Modification Categories 4–7, 9–10, and 12. The results for drivability testing of Emission Modification Category 7 shall apply to Emission Modification Categories 7 and 8, and the results for drivability testing of Emission Modification Category 10 shall apply to Emission Modification Categories 10 and 11. Defendants shall conduct drivability testing in accordance with the procedures in Attachment H.

2.d. On-Board Diagnostic Demonstration.

2.d.i. OBD Demonstration.

2.d.i.A. Demonstration of Critical OBD Monitors. For an OBD Demonstration Vehicle in each of OBD Clusters 3 and 4, Defendants shall perform the test methods set forth at 13 C.C.R. § 1968.2(h)(5) (2016) and apply the evaluation criteria set forth at 13 C.C.R. § 1968.2(h)(6) (2016), for each of the following critical OBD monitors: (1) NO_x SCR catalyst conversion efficiency (P20EE), (2) diesel particulate filter (“DPF”) filtering efficiency (P2002), (3) non-methane hydrocarbon (“NMHC”) catalyst conversion efficiency (P0420), (4) Exhaust Gas Sensors – NO_x sensor downstream amplitude offset (min) (P229F), (5) EGR system (BPU) low flow (P0401), (6) NO_x SCR Catalyst – DEF delivery performance with plugged injector fault (P20E8), (7) Exhaust Gas Sensors NO_x Sensor (upstream) – response rate (P22FA), (8) Exhaust Gas Sensors NO_x Sensor (upstream) – amplitude offset (min) (P2201), (9) Exhaust Gas Sensors NO_x Sensor (upstream) – amplitude plausibility (min) (P2201), (10) EGR System – slow response (P240F), (11) EGR System – cooler performance (P2457), (12) for those Emission Modification Categories with Cold Start Only, CSERS (P050E), (13) EGR System – high flow (P240F), (14) Fuel System FMO – rich (P0172), and (15) Fuel System FMO – lean (P0171).

2.d.i.A.1. OBD IRAF. For any OBD demonstration conducted under Paragraph 2.d.i.A, Defendants shall calculate a unique OBD Infrequent Regeneration Adjustment Factor for threshold failure detection as set forth at 13 C.C.R. § 1968.2(d)(6.2) (2016), using a method selected using engineering judgment and approved by EPA/CARB in the process outlined in Paragraph 3. The OBD IRAFs shall be derived for such monitors where, based on engineering judgment, the duration or frequency of DPF regeneration under malfunction conditions will be different after installation of the proposed Emission Modification Configuration as compared to the certified configuration.

- 2.d.i.B. WAL Demonstration. For an OBD Demonstration Vehicle in each of OBD Clusters 3–5, consistent with 13 C.C.R. § 1968.2(f)(5.2.2)(D) (2016), Defendants shall demonstrate the capability of the OBD system to detect the SCR malfunction that turns on the MIL under the following tests: two tests shall record OBD System data to the point where the SCR malfunction is detected by the worst acceptable limit (“WAL”) offset positive and offset negative upstream NOx sensor, two tests shall record OBD System data to the point where the SCR malfunction is detected by the WAL offset positive and offset negative downstream NOx sensor. As an alternative to using a WAL NOx sensor, Defendants may use computer modifications to disable the default emission control strategy and conduct such testing with a best performing unacceptable NOx sensor. Defendants may conduct these demonstrations by driving on-road or on a chassis dynamometer.
- 2.d.i.C. Full OBD Demonstration for OBD Cluster 5. For an OBD Demonstration Vehicle in OBD Cluster 5, Defendants shall conduct a full OBD demonstration, except that the NMHC catalyst conversion efficiency monitor (P0420) shall be omitted. For this demonstration, Defendants shall derive OBD IRAFs as set forth at 13 C.C.R. § 1968.2(d)(6.2) (2016), except that the OBD IRAFs shall be derived during development, using a method selected using engineering judgment and approved by EPA/CARB in the process outlined in Paragraph 3. The OBD IRAFs shall be derived for monitors where, based on engineering judgment, the duration or frequency of DPF regeneration under malfunction conditions will be different after installation of the proposed Emission Modification Configuration as compared to the previous configuration.
- 2.d.i.D. OBD Demonstration for OBD Cluster 2. During the MY 2020 OM651 Sprinter full OBD Demonstration, Defendants shall fulfill the requirements of Paragraph 2.d.i.A on the MY 2020 OM651 Sprinter, and shall demonstrate the (1) DPF efficiency monitor, (2) DEF delivery performance monitor, and (3) wrong medium detection monitor, on the MY 2020 OM651 Sprinter, and the OBD Demonstration Vehicle for OBD Cluster 2.
- 2.d.i.E. Specific Alternative or Modified Monitor Demonstration Proposals. If Defendants seek to use a specific alternative or modified OBD demonstration procedure described in 13

C.C.R. § 1968.2 (2016) that may be used with Executive Officer approval, Defendants shall submit, pursuant to Paragraph 3.a.iii, a proposal describing the specific alternative or modified demonstration procedure in detail for EPA/CARB approval for each OBD Cluster for which Defendants seek to use a specific alternative or modified demonstration procedure.

2.d.i.F. Default Action Monitor Demonstration. For any monitor with a default action demonstrated under this Paragraph 2.d, Defendants may satisfy the demonstration requirement by showing that emissions remain below the applicable OBD threshold with a best performing unacceptable (“BPU”) component and the default emission control strategy disabled through computer modifications.

2.d.i.G. Defendants may perform OBD testing under this Paragraph 2.d.i on two OBD Demonstration Vehicles simultaneously if and only if the following conditions are met with respect to both of the OBD Demonstration Vehicles: (1) Defendants perform SCR efficiency and EGR low flow monitoring demonstrations on both vehicles, (2) the calibration set is the same on both vehicles, (3) both vehicles are the same Model and MY, (4) the Mileage on the vehicles is within 5,000 miles of each other at the time Defendants begin testing the vehicles, and (5) and Defendants conduct monitoring as determined by EPA/CARB pursuant to Paragraph 3.c on each OBD Demonstration Vehicle.

2.d.ii. PVE Testing.

2.d.ii.A. J1 Testing OBD Clusters 1, 3–5. For each of OBD Clusters 1 and 3–5, Defendants shall conduct PVE testing on an Emission Plus Test Vehicle or on an OBD Demonstration Vehicle in accordance with 13 C.C.R. § 1968.2(j)(1) (2016).

2.d.ii.B. J2 Testing OBD Clusters 1, 3–5. For each of OBD Clusters 1 and 3–5, Defendants shall conduct PVE § 1968.2(j)(2) testing on an Emission Plus Test Vehicle or on an OBD Demonstration Vehicle in accordance with 13 C.C.R. § 1968.2(j)(2) (2016), modified pursuant to the PVE diagnostic list in Attachment J to this Test Protocol. For OBD Cluster 4, Defendants shall submit an update to the PVE diagnostic list in Attachment J under Paragraph

3.a.v. The updated PVE diagnostic list must meet the criteria in Paragraphs 2.d.ii.B.1 - 2.d.ii.B.3.

2.d.ii.B.1. Dynamic Portion of SAE J1699 test, demonstrating ability to set readiness to complete for all diesel readiness categories.

2.d.ii.B.2. One diagnostic from each control unit and for each monitored emission-related component, as defined in Part 2 of the applicable certification application, to set pending fault, confirmed fault, permanent fault code, and healing of permanent fault code.

2.d.ii.B.3. Any diagnostic that reports to readiness bits used for inspection and maintenance to set pending, confirmed, and permanent fault codes, and healing of permanent fault codes, which will include monitors that undergo software or calibration modification as part of the proposed Emission Modification Configuration.

2.d.iii. Demonstration of driver inducement strategies. In connection with the testing performed under this Paragraph 2.d.iii, Defendants shall report, for OBD Clusters 2–5, all information for SCR Inducement Strategies contained in Appendix M of the MY 2017 Sprinter AECD document, including a Tampering Evaluation matrix (Figure App’x M.8 of the MY 2017 Sprinter AECD document).

2.d.iii.A. DEF Quality Testing. On an Emission Plus Test Vehicle or an OBD Demonstration Vehicle in each of OBD Clusters 2–5, Defendants shall conduct DEF quality testing, using two test cases: (1) the point where Defendants may detect diluted DEF but adapt to remain below the Emission Standards, and (2) the point where poor DEF quality may cause the vehicle to exceed the Emission Standards for that Emission Modification Category required in Attachment I.

2.d.iii.A.1. In both test cases, detection of DEF dilution shall take place one hour after the completion of intermixing time, with the conditions for intermixing time described in the Updated AECD Document for the applicable Emission Modification Category,

and final inducement must occur as described in the Updated AECD Document which shall equal the number of restarts in the original certification application for vehicles in that Emission Modification Category.

2.d.iii.A.2. In case (2), a fault will be detected and the MIL will be illuminated. After the MIL is illuminated, inducement shall begin after a specified amount of driving distance, as described in the Updated AECD Document for the applicable Emission Modification Category.

2.d.iii.A.3. Defendants shall conduct the testing required in this Paragraph 2.d.iii.A by performing an emission standard test. The UDC may not be used to perform the testing required in this Paragraph 2.d.iii.A. The HWFET or FTP 75 may be used. For test case (1) (demonstrating the point where Defendants may detect diluted DEF but adapt to remain below the Emission Standards), if a different test than the FTP 75 is used, Defendants shall perform an FTP 75 immediately after the demonstration test to demonstrate that the OBD Demonstration Vehicle meets the Emission Standards for that Emission Modification Category required in Attachment I.

2.d.iii.A.4. Defendants shall collect the data required in Paragraphs 4.a.i.H, 4.a.xiv and 4.a.xv of this Test Protocol.

2.d.iii.B. Additional Tampering and Inducement Testing.
Defendants shall conduct additional tampering and inducement testing on one Emission Plus Test Vehicle or OBD Demonstration Vehicle with a Gen1 DEF dosing system (the Emission Plus Test Vehicle or OBD Demonstration Vehicle for OBD Cluster 5), to demonstrate the performance of the Gen1 DEF dosing system.

2.d.iii.B.1. The tampering-relevant test case shall demonstrate that an approved

inducement begins at or before the detection of zero DEF level.

2.d.iii.B.2. The inducement-relevant test cases shall include faults associated with a (1) disconnected dosing valve, (2) disconnected SCR wiring harness (ECU-DCU communication fault), (3) blocked DEF line or dosing valve, (4) disconnected SCR NOx sensor, and (5) disconnected exhaust temperature sensor.

2.d.iii.B.3. Defendants shall conduct the tampering-relevant and inducement-relevant testing required in this Paragraph 2.d.iii.B on-road.

2.d.iii.B.4. Defendants shall collect the data required in Paragraphs 4.a.i.H, 4.a.xiv and 4.a.xv of this Test Protocol.

2.d.iii.C. Summary Table. The requirements of Paragraphs 2.d.iii.A and 2.d.iii.B are summarized in the following table:

Demonstration	Dosing System	OBD Clusters	Test Vehicle
DEF quality detection	Gen 2	OBD Cluster 2	Sprinter OM651 MY14–16
	Gen 1	OBD Cluster 3	GL350 MY13–16
		OBD Cluster 4	ML320 MY09 ML 350 MY10–11
		OBD Cluster 5	GLK250 MY13–15
<u>Tampering-relevant test case</u> Approved inducement begins at or before the detection of zero DEF level	Gen 1	OBD Cluster 5	GLK250 MY13–15
<u>Inducement-relevant test cases</u> Faults associated with (1) disconnected dosing valve, (2) disconnected SCR wiring harness (ECU-DCU communication fault), (3) blocked DEF line or dosing valve, (4) disconnected SCR NOx sensor, and (5) disconnected exhaust temperature sensor.	Gen 1	OBD Cluster 5	GLK250 MY13–15

2.e. Emission Modification Category 3 / OBD Cluster 2 Testing.

2.e.i. For Emission Modification Category 3 and OBD Cluster 2 (MY 2014 to MY 2016 OM651 Sprinters), data from MY 2020 OM651 Sprinter vehicles may be used to satisfy requirements of this Test Protocol as follows:

2.e.i.A. Emission, Special Cycle, and PEMS testing required under Paragraph 2.b,

2.e.i.B. OBD demonstration required pursuant to Paragraph 2.d, as modified by EPA/CARB pursuant to Paragraph 3.c,

2.e.i.C. Determination of any OBD IRAFs, and

2.e.i.D. Determination of any DFs.

2.e.ii. If EPA/CARB determine, after review of the OBD Interim Report for Cluster 2 under Paragraph 3.a, that monitors in addition to those specified in Paragraph 2.d.i.D require testing, or additional testing is required under 13 C.C.R. §§ 1968.2(j)(1) (2016) and 1968.2(j)(2) (2016), Defendants shall perform such tests consistent with 13 C.C.R. § 1968.2 (2016) on an OBD Demonstration Vehicle for Cluster 2 and submit the results as required for other OBD Clusters in the Emission Modification Proposal Report.

2.e.iii. If the MY 2020 OM651 Sprinter is not certified and its OBD System is not approved by EPA/CARB, or if EPA/CARB determines that the MY 2020 OM651 Sprinter's OBD System is not similar enough to that of OBD Cluster 2 such that the MY 2020 OM651 Sprinter's OBD System is not representative of that of OBD Cluster 2, Defendants shall conduct for Emission Modification Category 3 and OBD Cluster 2, all testing required for Emission Modification Category 10 and OBD Cluster 5 under this Test Protocol, except (1) with respect to benching, for which Defendants shall follow the requirements applicable to Emission Modification Category 10, (2) Defendants shall not be required to conduct testing pursuant to Paragraph 2.d.iii.B, and (3) for any US06 required under this Appendix B, including those performed pursuant to Attachment C, Defendants shall conduct a modified US06 emissions test in accordance with 13 C.C.R. § 1961.2(a)(7)(C) SFTP NMOG+NO_x and CO Exhaust Emission Standards for Medium-Duty Vehicles).

2.f. OBD Noncompliances.

2 f.i.A. Pre-Approved OBD Noncompliances. For Clusters 1 and 5, Defendants shall be permitted the OBD Noncompliances

listed in Attachment L of this Test Protocol. For Clusters 2, 3, and 4, Defendants shall be permitted the following number of Pre-Approved OBD Noncompliances:

<u>OBD Cluster</u>	<u>Emission Modification Category</u>	<u>Engine</u>	<u>OBD Demonstration Vehicle Model, MY</u>	<u># of Pre-Approved OBD Noncompliances</u>
2	Emission Modification Category 3	OM651	Sprinter, MY14-16	3
3	Emission Modification Categories 4 and 6	OM642	GL350, MY13-16	7
4	Emission Modification Categories 5, 7 and 8	OM642	ML320 MY09 ML350, MY10-11	5

Defendants shall be permitted a total of 11 Pre-Approved OBD Noncompliances and Class 1 Additional OBD Noncompliances subject to the following: If the MY20 OM651 OBD approval is used as a basis for the Emission Modification Proposal Report for OBD Cluster 2, any 13 C.C.R. § 1968.2 OBD Noncompliance identified in the 13 C.C.R. § 1968.2(j)(2) PVE report for the MY20 OM651 Sprinter applicable to OBD Cluster 2 shall be considered a Class 1 OBD Noncompliance for OBD Cluster 2.

2 f.i.B. Limitations on OBD Noncompliances. No OBD noncompliance that would trigger a recall under the version of 13 C.C.R. § 1968.5 applicable to the Model Year at the time of its certification will be approved, except as provided under Paragraphs 12 and 13 of the California First Partial Consent Decree.

2 f.i.C. Applicability of OBD Regulations. Defendants shall comply with the OBD regulations in effect at the time of certification of the particular Model Year of the vehicle, including any requirements regarding testing out, and the OBD regulations in effect at the time of certification shall also be used to determine OBD Noncompliances for vehicles of that Model Year.

3. OBD Interim Report.

3.a. Contents and Submission Timing. Defendants shall provide, for OBD Cluster 2 by January 27, 2020, for OBD Cluster 3 by November 29, 2019, for OBD Cluster 4 by May 11, 2021, for OBD Cluster 5 by August 12, 2019, for review and

approval by EPA/CARB, a report for each of OBD Clusters 2–5 (the “OBD Interim Report”) that contains the following:

- 3.a.i. A list of the OBD monitors for which Defendants will derive a new OBD IRAF as required by Paragraphs 2.d.i.A.1, 2.d.i.C, 2.d.i.D, and 2.e.i.C, an explanation of the methodology Defendants proposes to use to develop each OBD IRAF, and a summary of the underlying engineering judgments made to arrive at this methodology,
- 3.a.ii. A list of all monitors for which Defendants determined OBD IRAFs were not needed and the reason why OBD IRAFs were not needed for those monitors,
- 3.a.iii. For each OBD Cluster for which Defendants seek to use a specific alternative or modified OBD demonstration procedure pursuant to Paragraph 2.d.i.E, a proposal describing the procedure for each OBD Cluster, as well as a justification for the need to use an alternative or modified OBD demonstration procedure,
- 3.a.iv. Where applicable, a justification for adjusting calibration values under Paragraph 1.d.iv by showing that there is no other method to simulate faults during an OBD demonstration test case,
- 3.a.v. For OBD Clusters 3 and 4, a list of diagnostics Defendants propose to demonstrate for 13 CCR § 1968.2(j)(2) (2016) testing required under Paragraph 2.d.ii.B,
- 3.a.vi. A list of relevant OBD demonstration test cases where a DPF regeneration is part of the workshop procedure to return a vehicle to normal operating condition following the demonstration,
- 3.a.vii. For OBD Cluster 2, a comparison between OBD Cluster 2’s OBD System and the MY 2020 OM651 OBD System, including a list of monitors for each, and
- 3.a.viii. Any testing data supporting Defendants’ proposal that EPA/CARB may need to evaluate the proposal.
- 3.a.ix. Certification. Includes a certification, in accordance with Paragraph 48 of the Consent Decree, with respect to all information contained in the OBD Interim Report.
- 3.b. Consultation. Defendants shall make themselves available, upon request by EPA/CARB, within 10 Days after Defendants submit the OBD Interim Report, to provide any information that EPA/CARB need to evaluate the OBD Interim Report.
- 3.c. Response. Defendants may consider the OBD Interim Report disapproved unless

otherwise notified in writing by EPA/CARB within 30 Business Days of EPA's/CARB's receipt of the OBD Interim Report. Any approval, approval on specified conditions, approval in part, or disapproval shall follow Paragraphs 5.a.i.A – 5.a.i.D, with the exception that the title of the communication shall reflect that it relates to the OBD Interim Report, and shall also reference the relevant OBD Cluster.

4. Emission Modification Configuration Data Collection and Dissemination

4.a. Testing Data and Final Report. Defendants shall complete all testing required under this Test Protocol and submit it to EPA and CARB in a single submission, as a report (the "Emission Modification Proposal Report") for each Emission Modification Category, by 11:59 pm Eastern Time on the date specified in Attachment I or other date, as modified under Paragraph 87 and agreed to by EPA, CARB, and Defendants. If a test is not required for a specific Emission Modification Category or OBD Cluster under this Test Protocol, the corresponding data collection and dissemination requirement does not apply. Each Emission Modification Proposal Report shall include the following information, with the underlined Paragraph "titles" serving as section and subsection headings for the Report:

4.a.i. Executive Summary. An executive summary that:

4.a.i.A. Emission Standard. (1) States the Emission Standard to be met for that Emission Modification Category pursuant to Attachment I and the vehicle category (e.g., for EPA, HDV1–2, and for CARB, MDV, LDV or LDT 1–4), (2) states the average final emission results determined by application of any Infrequent Regeneration Adjustment Factors but not Deterioration Factors (except with respect to Paragraph 2.e.i.D DFs) determined at the time of certification for the FTP 75, HWFET, US06 and SC03, and (3) states whether the final average emissions from the Emission Plus Test Vehicle meets that Emission Standard. If Defendants select a Test Vehicle that exceeds FUL during testing under this Test Protocol, Defendants shall not rely upon the exceedance of FUL either to challenge emission data from the vehicle or to apply any discount factor to estimate emissions. Defendants shall not be required to demonstrate compliance beyond FUL, in accordance with 40 C.F.R. § 86.1805-12. Notwithstanding the foregoing sentence, Defendants have the discretion to select Test Vehicles that will exceed their FUL during testing under this Test Protocol. Nothing in this Paragraph changes Defendants' obligation to meet the OBD requirements in Paragraph 2.f.

4.a.i.B. Emission, Special Cycle and PEMS Testing. Provides, for one of each type of emission test and PEMS test conducted under

Paragraph 2.b, the percentage of dosing for each test in feed-forward mode, fill-level mode, and without dosing, and the percentage of overall SCR efficiency and SCR efficiency in feed-forward mode. SCR efficiency shall be calculated based on the NOx sensors and, when the downstream NOx sensor is not available, the exhaust gas analyzers.

4.a.i.C. Fuel Economy Testing. Reports, for each fuel economy test conducted under Paragraph 2.c.i: (1) the individual fuel economy results from each test, (2) the average of the fuel economy test results (i.e., the results from each test, averaged together), consistent with the combined 5 cycle fuel economy test in 40 C.F.R. Part 600, (3) any change in fuel economy between the average of the A and the average of the B tests conducted under Paragraph 2.c.i (in MPG to two decimal places, and as a percentage change), (4) if there are no changes, that there are no changes, and (5) consistent with 40 C.F.R. Part 600.006(b)(1)(iii)(C), that the aforementioned fuel economy test results after the proposed Emission Modification Configuration is installed are in compliance with the applicable Emission Standard. Defendants' reporting of any average changes in fuel economy shall not be deemed an admission that the changes are material.

4.a.i.C.1. The description of changes to fuel economy may be accompanied by a statement explaining that any changes in fuel economy may be different (or nonexistent) for different drivers, depending on multiple factors such as driving behavior and current conditions.

4.a.i.D. NVH and Drivability Testing. Describes, for each NVH and drivability test conducted under Paragraphs 2.c.ii and 2.c.iii, any material changes to NVH and drivability resulting from the proposed Emission Modification Configuration, and if there are no material changes, states that there are no material changes and the basis for this conclusion pursuant to Attachment G for NVH and Attachment H for drivability.

4.a.i.E. OBD Summary Table. For Emission Modification Categories 1 - 5, and 9, includes an OBD Summary Table for the OBD Cluster associated with the Emission Modification Category in one of the following formats, as applicable: 1) if there are changes, a redline of the OBD Summary Table provided for the vehicle's test group at the time of certification, where the redline identifies the changes in the OBD system from the certified configuration due to the proposed Emission Modification Configuration, or, 2) if

there are no material changes, the description of the OBD system from the certified configuration and a statement that there are no material changes and the basis for this conclusion. The OBD Summary Table section of the Report shall also include a written description of any OBD Noncompliances, OBD concerns, or other nonconformities with the applicable version of 13 C.C.R. § 1968.2, or Noncompliance under Paragraphs 12 or 13 of the California Consent Decree. For Emission Modification Categories, 6-8 and 10-12, Defendants shall provide a written description of any OBD Noncompliances, OBD concerns, or other nonconformities with the applicable version of 13 C.C.R. § 1968.2 or Noncompliance under Paragraphs 12 or 13 of the California Consent Decree.

- 4.a.i.F. OBD IRAF Determination. Lists the OBD monitors for which Defendants derived a new OBD IRAF as required by Paragraph 3.a.i and 3.a.ii, explains the methodology Defendants used to develop each OBD IRAF, and lists all monitors for which Defendants determined OBD IRAFs were not needed and the reason why OBD IRAFs were not needed for those monitors.
- 4.a.i.G. Vehicle Maintenance. Provides a description of any material changes on aspects of vehicle maintenance which may reasonably be important to vehicle owners, including, but not limited, to oil changes, EGR cleaning, DEF refill, and DPF replacement.
- 4.a.i.H. Driver Inducement. For driver inducement testing conducted under Paragraph 2.d.iii, reports the level (in percent DEF and percent water) the Emission Control System can adapt to a DEF dilution and stay below the Emission Standard to be met for that Emission Modification Category pursuant to Attachment I and, if available, report the same level from the certification documentation. Defendants shall also specifically describe any material changes in driver inducement strategies from the certified configuration resulting from the proposed Emission Modification Configuration, and if there are no material changes, state that there are no material changes and the basis for this conclusion.
- 4.a.i.I. Test Vehicle Repairs. Provides a description of any repairs of any Test Vehicle pursuant to Paragraphs 1.b and 1.c.iv.B of this Test Protocol, as well as the following information: curb weight and gross vehicle weight.
- 4.a.i.J. Test Vehicle Malfunctions. Provides a description of any Malfunction of any Test Vehicle pursuant to Paragraph 1.c of this Test Protocol, and describes the reason for the Malfunction, as

well as the following information: curb weight and gross vehicle weight.

- 4.a.i.K. Hardware Changes. Lists all hardware changes made in the proposed Emission Modification Configuration, including those changes specified in Attachment I.
- 4.a.i.L. Carry Over Information. List all information carried over from the previous ECU and adjustments made in the Emission Modification Assessment Report under Paragraph 1.d.iii.
- 4.a.i.M. Aborted/Invalidated Tests. Lists all tests performed under this Test Protocol that were aborted and/or invalidated for any reason and provides a description of the reason the test was aborted and/or deemed invalid (e.g., equipment problems, DPF Regeneration Event). The data for any aborted or invalidated test shall be provided together with the data from any completed tests, in the relevant “section” of the Emission Modification Proposal Report below.
- 4.a.i.N. Aborted Aging Cycle. In the event an aging cycle is aborted before all five operating points are completed, pursuant to Paragraph 1.e.i.A.3, Defendants shall provide test sequence data for each aborted aging cycle.
- 4.a.i.O. Declaration. Includes a declaration from Defendants’ corporate official certifying that once the proposed Emission Modification Configuration is applied, the resulting vehicle shall contain no Defeat Devices.
- 4.a.i.P. Certification. Includes a certification, in accordance with Paragraph 48 of the Consent Decree, with respect to all information contained in the Emission Modification Proposal Report, that explicitly states that the Test Protocol, including the process described in Paragraph 1.e.i.A (Bench-Aging Process) and the bench aging appendix to the Updated AECD Document, was followed, the OBD Interim Report under Paragraph 3.c, was complete and accurate and any conditions specified in EPA/CARB’s approval of the OBD Interim Report were followed, and that the laboratory QA/QC reports referenced in Paragraph 4.a.xviii were in effect at the time of testing and were followed.
- 4.a.ii. AECD Documentation. An Updated AECD Document for the relevant Emission Modification Category that: (1) discloses all AECDs in the proposed Emission Modification Configuration, (2) does not include any Defeat Devices, (3) describes the driver inducement strategies in tabular

form, with the same rows and columns as in “Figure Appendix M.8: BlueTEC Tampering Evaluation Matrix,” page M-4, Appendix M, MY 2017 Sprinter AECD document, (4) includes, in a format matching that of Attachment B, at a minimum, the signals listed in the “description” column, and the “signal name” and “minimum data rate” columns populated in the Updated AECD Document and cross-referenced or correlated to the generic “description” column, and (5) an appendix regarding bench aging containing (i) the duration of the aging cycle; (ii) the target engine speed, target temperature upstream of the DPF, and target engine torque at each operating point; (iii) the total number of regeneration cycles required for bench aging the Aftertreatment System to the applicable FUL; (iv) the actual bench aging target used for the Emission Plus Test Vehicle, and if less than FUL, the calculation according to Paragraph 1.e.i.B used to derive the bench aging target.

4.a.ii.A. For any AECD that results in a reduction in the effectiveness of the Emission Control System under conditions which may be reasonably be expected to be encountered in normal vehicle operation and use, the Updated AECD Document shall include a detailed rationale for why the AECD is not a Defeat Device (e.g., how the conditions are substantially included in the Federal emission test procedure; how the AECD is justified in terms of protecting the vehicle against damage or accident; how the AECD does not go beyond the requirements of engine starting; or how the AECD applies only for emergency vehicles).

4.a.ii.B. For any AECD Defendants justify based on substantial inclusion in the Federal emission test procedure, provide data indicating the amount of operation in the Federal emission test procedure and the extent of activation in modulating the emission control system. For the following AECDs, this data shall be provided in a graphical format comparable to that included in the Updated AECD Document for Emission Modification Category 9 for the PM/CO₂/NO_x Tradeoff Strategy: (1) PM/CO₂/NO_x Tradeoff Strategy, (2) Aftertreatment System Thermal Management. The requirement in this Paragraph applies only to Updated AECD Documents submitted under this Test Protocol for Emission Modification Categories 4–12.

4.a.iii. AECD Redlines/Tables. Redlines or tables of the Updated AECD Document, as follows:

- 4.a.iii.A. In the case of Emission Modification Categories 1 and 2, a redline comparing the Updated AECD Document to the MY 2018 Sprinter AECD Document;
- 4.a.iii.B. In the case of Emission Modification Category 3, a redline comparing the Updated AECD Document to the draft MY 2020 OM651 Sprinter AECD Document;
- 4.a.iii.C. In the case of Emission Modification Categories 10–12, a redline comparing the Updated AECD Document to the Updated AECD Document for Category 9;
- 4.a.iii.D. In the case of the first-submitted Updated AECD Document among Emission Modification Categories 4–8, a table comparing the Updated AECD Document for that Category to the Updated AECD Document for Category 9;
- 4.a.iii.E. In the case of subsequent Updated AECD Documents for Emission Modification Categories 4–8, a redline comparing the Updated AECD Document to the Updated AECD Document submitted for the first Emission Modification Category among Categories 4–8.
- 4.a.iv. Software Change Summary. A summary of functional software changes to each control unit made in the proposed Emission Modification Configuration.
- 4.a.v. Software Information. For the ECU, the complete software functional description document in the German language, and the table of contents of the functional description document in the English language, the compiled software files containing data and software code (e.g., .HEX Files), and the complete memory map (e.g., .A2L File) containing a description of map addressing and measure points.
- 4.a.vi. Emission and Special Cycle Testing. For each emission test conducted under Paragraph 2.b.i: (1) bag data, (2) modal (continuous) data in .CVS and .DAT file formats, (3) ECU data for the parameters identified in the list submitted under Paragraph 4.a.ii in .CSV and .DAT file formats, and (4) a Flat File of each dynamometer test that includes vehicle identification information, the VIN, a test identification number, and average emissions results per phases (bags) and weighted, as listed in Attachment E. Modal data shall be collected using undiluted tailpipe modal measurements.
- 4.a.vii. PEMS Testing. For each PEMS test conducted under Paragraph 2.b.ii: (1) all raw data generated, including speed, load, and second-by-second emissions data, in a .CSV file format and in the native format of the

PEMS unit, the AVL iFile, (2) average emissions results for NO_x and CO₂, ambient temperature and other information related to environmental conditions during the test, (3) for Emission Modification Categories 3 – 8 and 10 – 12, average emissions results for THC and CO, ambient temperature and other information related to environmental conditions during the test, (4) the ECU data parameters identified in the list submitted under Paragraph 4.a.ii, and (5) a Flat File of each test that includes vehicle identification information, the VIN, a test identification number, and average emissions results per route segment (parsing), as listed in Attachment E.

4.a.vii.A. Post-processing of PEMS data shall be carried out as follows: (1) drift correction shall be performed in accordance with 40 C.F.R. § 1065.672; (2) wet/dry correction shall be performed in accordance with 40 C.F.R. § 1065.655; and (3) humidity correction shall be performed in accordance with 40 C.F.R. § 1065.670.

4.a.viii. Log Sheets. For all data provided pursuant to Paragraphs 4.a.vi (Emission and Special Cycle Testing), 4.a.vii (PEMS Testing), 4.a.ix (OBD Critical and Full Monitor Demonstration), 4.a.xi (J1 Testing), 4.a.xii (J2 Testing), and 4.a.xiv (DEF Quality Testing), Defendants shall submit a log sheet listing the unique CALID and CVN numbers for the proposed Emission Modification Configuration; for the Emission Plus Test Vehicle or OBD Demonstration Vehicle, the Model Year, Model, and VIN; a test identification number; and the date, time, drive cycle, and Mileage (both for the beginning and for the ending of the test). Such log sheets and data sets shall also include data for any tests that were invalidated for any reason. For EMC 11, the CALID and CVN information will be submitted in an addendum to the Final Report no later than June 15, 2020.

4.a.ix. OBD Critical and Full Monitor Demonstration. For each demonstration of critical and full OBD monitors conducted under Paragraphs 2.d.i.A and 2.d.i.C: (1) a written description of any OBD Noncompliance, concerns, or other nonconformities with the applicable version of 13 C.C.R. § 1968.2, or Noncompliance under Paragraphs 12 or 13 of the California Consent Decree, (2) all test data collected as set forth at 13 C.C.R. § 1968.2(h)(5.3) (2016), including all test data as detailed in 13 C.C.R. § 1968.2(h)(5.3.2) (2016), (3) the ECU data parameters identified in the list submitted under Paragraph 4.a.ii in .CSV and .DAT file formats, (4) a Flat File of each dynamometer test that includes vehicle identification information, the VIN, a test identification number and average emissions results per phases (bags) and weighted, as listed in Attachment E, (5) documentation of the specific hardware used in the testing, (6) specification of demonstration method used (i.e., on-road or dynamometer test cycle) and, if EPA/CARB approved an alternate procedure under Paragraph 3.c, the date of the

approval, (7) all demonstration test results, and (8) any relevant associated data.

- 4.a.x. WAL Demonstration Testing. For the OBD monitoring capability testing required in Paragraph 2.d.i.B (NOx sensor offset), Defendants shall provide: (1) the ECU data parameters in the list submitted under Paragraph 4.a.ii in .CSV and .DAT file formats, (2) documentation of the specific hardware used in the testing, (3) specification of demonstration method used (i.e., on-road or dynamometer test cycle) and, if EPA/CARB approved an alternate procedure under Paragraph 3.c, the date of the approval, (4) all demonstration test results, and (5) any relevant associated data.
- 4.a.xi. J1 Testing. For Production Vehicle Evaluation § 1968.2(j)(1) testing conducted under Paragraph 2.d.ii.A: (1) a written report of the problem(s) identified and proposed corrective action (if any) to remedy the problem(s) consistent with 13 C.C.R. § 1968.2(j)(1.5.1) (2016), and (2) a report of the results and the test log file, consistent with 13 C.C.R. § 1968.2(j)(1.5.2) (2016).
- 4.a.xii. J2 Testing. For Production Vehicle Evaluation § 1968.2(j)(2) testing conducted under Paragraph 2.d.ii.B: (1) a written description of the results of all testing conducted pursuant to section 13 C.C.R. § 1968.2(j)(2) (2016), including the method used to induce a malfunction in each diagnostic, the MIL illumination status, and the confirmed fault code(s) stored, and any OBD Noncompliances, OBD concerns, or other nonconformities with the applicable version of 13 C.C.R. § 1968.2, or Noncompliance under Paragraphs 12 or 13 of the California Consent Decree, and (ii) a list of diagnostics that were previously demonstrated under Paragraph 2.d.i.
- 4.a.xiii. OBD Calibration Adjustments/Restorations. For all OBD demonstration testing pursuant to this Test Protocol, where applicable, a list of all calibration values adjusted and restored after conducting an OBD demonstration test case under Paragraph 1.d.iv.
- 4.a.xiv. DEF Quality Testing. For the DEF dilution inducement data specified in Paragraphs 2.d.iii.A and 2.d.iii.B, Defendants shall provide the results in a Flat File for the parameters listed in Attachment E (“DEF Dilution Inducement Strategy Parameters”) and any relevant associated data.
- 4.a.xv. Additional Tampering and Inducement Demonstrations. For the DEF level and tampering inducement demonstrations required in Paragraphs 2.d.iii.A and 2.d.iii.B, Defendants shall provide documentation that includes the following information: (1) the specific hardware used in the inducement demonstrations, (2) the test procedure used for the demonstrations, and (3) the actual inducement test results.

- 4.a.xvi. Test Vehicle Repairs. Any records related to any repairs of any Test Vehicle or Secondary Vehicle pursuant to Paragraphs 1.b or 1.c.iv of this Test Protocol. Records prior to Defendants' acquisition of the vehicle in accordance with Paragraph 1.a may be drawn from internal Defendants' systems and databases pursuant to Paragraph 1.b.iv.
- 4.a.xvii. Test Vehicle Malfunctions. Any records related to any Malfunction or exceedance of the Emission Standard of any Test Vehicle or Secondary Vehicle, and to the determination of the reason for the Malfunction pursuant to Paragraph 1.c of this Test Protocol. This excludes malfunctions implanted or exceedance of the Emission Standard as part of an OBD demonstration pursuant to Paragraphs 2.d.i or 2.d.iii, or a malfunction implanted as part of a PVE test under Paragraph 2.d.ii.
- 4.a.xviii. Laboratory QA/QC Reports. The QA/QC report(s) for any dynamometer laboratory conducting testing pursuant to this Test Protocol that covers the relevant period of dynamometer testing shall be maintained and furnished in accordance with Paragraph 82 of this Consent Decree, and shall constitute part of the administrative record of this case, pursuant to Paragraph 76 of this Consent Decree.
- 4.a.xix. Emission Modification Category 3 and OBD Cluster 2. For Emission Modification Category 3 and OBD Cluster 2, Defendants may use MY 2020 OM651 Sprinter development vehicles to perform emission testing, IRAF determination, OBD IRAF determination, and OBD demonstration testing (except as provided in described in Paragraphs 2.d.i.D and 2.d.iii). If Defendant does so, EPA and CARB shall review such materials as submitted pursuant to the MY 2020 OM651 Sprinter certification process, and those materials shall not be included in the Emission Modification Proposal Report. Rather, Defendants shall maintain and furnish records regarding these vehicles, including those related to maintenance, repairs, and Malfunctions, in accordance with Paragraph 82 of this Consent Decree. For OBD Cluster 2 testing described in Paragraphs 2.d.i.D, 2.d.iii, 2.e.ii, and 2.e.iii, Defendants shall provide all OBD records required pursuant to those Paragraphs along with any additional OBD records required after EPA/CARB review of the OBD Interim Report in the Emission Modification Proposal Report. If the MY 2020 OM651 Sprinter is not certified and its OBD System is not approved by EPA/CARB, Defendants shall provide for Emission Modification Category 3 and OBD Cluster 2, all records for Emission Modification Category 3 EPTV and the OBD Cluster 2 OBD Demonstration Vehicle that are required for Emission Modification Category 10 and OBD Cluster 5 under this Test Protocol, except that Defendants shall not be required to provide records pursuant to Paragraph 2.d.iii.B. All materials described in this Paragraph, whether submitted or held by Defendants pursuant to the MY 2020 OM651 Sprinter certification process, or submitted as part of the Emission

Modification Proposal Report, shall constitute part of the administrative record of this case, pursuant to Paragraph 76 of this Consent Decree.

5. EPA and CARB Review and Approval of Emission Modification Proposal Report

5.a. Agency Review of Testing Data. EPA and CARB shall review the Emission Modification Proposal Report to determine whether the proposed Emission Modification presents an approvable Emission Modification Configuration (after approval known as the “Approved Emission Modification” or “AEM”), according to the following criteria and timeline.

5.a.i. Process for Review and Approval. EPA/CARB shall have 45 Days, beginning at 12:01 am Eastern Time on the first Business Day after receipt of the Emission Modification Proposal Report, to approve or disapprove the proposed Emission Modification Configuration based on (1) failure to meet the Emission Standard, Emission Standard First Threshold or Emission Standard Upper Threshold during a test conducted in accordance with Paragraph 2.b.i of this Test Protocol, 40 C.F.R. Part 86, Subpart B, and 40 C.F.R. Part 1066, as applicable, (2) performance consistent with the existence of a Defeat Device, (3) performance consistent with the existence of an undisclosed AECD, (4) failure to meet the OBD requirements in Paragraph 2.d.i, 2.d.ii, 2.e, 2.f, and 3.c of this Test Protocol, or (5) failure to submit a complete Emission Modification Proposal Report. EPA/CARB shall review any proposed Emission Modification Configuration according to this Test Protocol, rather than according to any regulatory processes for reviewing applications for Certificates of Conformity, Executive Orders, or administrative recalls. If EPA/CARB approve a proposed Emission Modification Configuration that meets the Emission Standard First Threshold or Emission Standard Upper Threshold, then where this Consent Decree, Test Protocol and other Appendices and Attachments use the term, “Emission Standard,” that term shall be replaced with Emission Standard First Threshold or Emission Standard Upper Threshold, as relevant for the AEM for that Emission Modification Category.

5.a.i.A. Approval. If EPA/CARB approve a proposed Emission Modification Configuration in accordance with the requirements of this Test Protocol, each Agency shall timely notify Defendants by letter titled: “Notice of Approval of Emission Modification Configuration: [corresponding Emission Modification Category, Model(s), MY(s)],” after which Defendants shall then implement the AEM in accordance with Appendix A of the Consent Decree.

5.a.i.B. Approval Upon Specified Conditions. If EPA/CARB approve a proposed Emission Modification Configuration upon specified

conditions, each Agency shall timely notify Defendants by letter titled: “[Notice of Approval of Emission Modification Configuration Upon Conditions]: [corresponding Emission Modification Category, Model(s), MY(s)],” after which Defendants shall take all actions required to implement the modified AEM in accordance with Appendix A of the Consent Decree, subject to Defendants’ right to dispute the conditions specified under Section XI (Dispute Resolution).

5.a.i.C. Approval In Part. If EPA/CARB approve part of a proposed Emission Modification Configuration and disapprove the remainder, each Agency shall timely notify Defendants by letter titled: “[Notice of Partial Approval/Partial Disapproval of Emission Modification Configuration]: [corresponding Emission Modification Category, Model(s), MY(s)],” after which Defendants shall take all actions required to implement the AEM in accordance with Appendix A of the Consent Decree that are technically severable from any disapproved portions, subject to Defendants’ right to dispute the agencies’ decision under Section XI (Dispute Resolution). EPA and CARB shall identify each specific basis for disapproval in writing. Within 45 Days, or such other time as the parties agree to in writing, of receipt of EPA/CARB’s written identification of the specific bases for the disapproval, Defendants may submit one revised proposed Emission Modification Configuration that must resolve all of EPA/CARB’s bases for disapproval. EPA/CARB shall either approve or disapprove each complete revision within 45 Days of receipt of the revised proposed Emission Modification Configuration. If a resubmitted Submission is disapproved, in whole or in part, EPA/CARB may again require Defendants to correct any deficiencies in accordance with Paragraph 5.a.i.B, 5.a.i.C or Paragraph 5.a.i.D; or EPA/CARB may itself/themselves correct any deficiencies, and Defendants shall implement the Submission as modified by EPA/CARB, subject to Defendants’ right to invoke dispute resolution and the right of EPA/CARB to seek stipulated penalties. EPA/CARB shall then issue either a “Final Notice of Disapproval of Remainder of Proposed Emission Modification Configuration: [corresponding Emission Modification Category, Model(s), MY(s)],” that identifies the specific bases for the disapproval, or a “Notice of Approval of Remainder of Emission Modification Configuration: [corresponding Emission Modification Category, Model(s), MY(s)].” If EPA/CARB issue a Final Notice of Disapproval of Remainder, Defendants may invoke dispute resolution under Section XI (Dispute Resolution) of the Consent Decree.

5.a.i.D. Disapproval. If EPA/CARB disapprove in whole a proposed Emission Modification Configuration in accordance with the requirements of this Test Protocol, EPA/CARB shall timely notify Defendants by letter titled: “Notice of Disapproval of Proposed Emission Modification Configuration: [corresponding Emission Modification Category, Model(s), MY(s)],” that identifies each specific basis for disapproval. Within 45 Days, or such other time as the parties agree to in writing, of receipt of EPA/CARB’s letter(s), Defendants may submit one revised proposed Emission Modification Configuration that must resolve all of EPA/CARB’s bases for disapproval. EPA/CARB shall either approve or disapprove such revision within 45 Days of receipt of the revised proposed Emission Modification Configuration. If a resubmitted Submission is disapproved, in whole or in part, EPA/CARB may again require Defendants to correct any deficiencies in accordance with this Paragraph 5.a.i.D or Paragraph 5.a.i.C; or EPA/CARB may itself/themselves correct any deficiencies, and Defendants shall implement the Submission as modified by EPA/CARB, subject to Defendants’ right to invoke dispute resolution and the right of EPA/CARB to seek stipulated penalties. EPA/CARB shall then issue either a “Final Notice of Disapproval of Proposed Emission Modification Configuration: [corresponding Emission Modification Category, Model(s), MY(s)],” that identifies the specific bases for the disapproval, or a “Notice of Approval of Emission Modification Configuration: [corresponding Emission Modification Category, Model(s), MY(s)].” If EPA/CARB issue a Final Notice of Disapproval, Defendants may invoke dispute resolution under Section XI (Dispute Resolution) of the Consent Decree.

5.a.i.E. Failure to Make a Determination. If EPA/CARB, as applicable, fail to make a determination on a proposed Emission Modification Configuration within 45 Days of receipt of the Assessment Report (as of 12:01 am Eastern Time on the 46th Day after receipt of the Assessment Report), Defendants may, at their discretion, consider the proposed Emission Modification Configuration to be disapproved in accordance with Paragraph 5.a.i.D and may invoke dispute resolution under Section XI (Dispute Resolution) of the Consent Decree.

5.b. Confirmation Testing. Prior to approval of the proposed Emission Modification Configuration under Paragraph 5.a above, EPA/CARB reserve the right to conduct emission tests and PEMS tests pursuant to 2.b.i and 2.b.ii, OBD tests pursuant to Paragraphs 2.d and 2.e, and other special tests. EPA/CARB shall request, and Defendants shall provide no earlier than the date of submission of the Emission Modification Proposal Report, no more than one Test Vehicle from each Emission Modification Category and OBD Cluster, with the

exception of Emission Modification Category 9, for which Defendants shall provide both EPA and CARB a Test Vehicle. Along with any such request, if applicable, EPA/CARB shall furnish parameter or other forms EPA/CARB need to conduct testing. The prior sentence shall not preclude EPA/CARB from requesting additional information during confirmation testing. When Defendants provide such a Test Vehicle, the readiness bits on the Test Vehicle shall be set to complete, and Defendants shall promptly submit any parameter or other forms requested by EPA/CARB. Confirmation testing may be the basis for approval or disapproval of a proposed Emission Modification under the criteria of Paragraph 5.a.i, except that approval or disapproval based on special cycle or PEMS tests may only occur under 5.a.i(2) or 5.a.i(3). If requested by EPA and/or CARB, Defendants shall provide EPA and/or CARB with all equipment and software necessary to duplicate the testing required under this Test Protocol.

Attachment A Emission Plus Test Vehicles and OBD Demonstration VehiclesTable 1. Emission Plus Test Vehicles

<u>Emission Modification Category</u>	<u>Engine</u>	<u>Model MY</u>	<u>Median Mileage</u>	<u>Minimum Vehicle Mileage at Start of Testing</u>	<u>ATS Mileage After Aging and Stabilization, Per Paragraph 1.e for Emission and PEMS Testing</u>
Emission Modification Category 1	OM642	Sprinter, MY 13	81,900 miles	At least 76,900 miles	120,000 miles
		Sprinter, MY 14	51,400 miles	At least 46,400 miles	120,000 miles
		Sprinter, MY 15	36,300 miles	At least 31,300 miles	120,000 miles
		Sprinter, MY16	25,500 miles	At least 20,500 miles	120,000 miles
Emission Modification Category 2	OM642	N/A; EPTV for Emission Modification Category 1 tested			
Emission Modification Category 3	OM651	Sprinter MY 14	93,600 miles	At least 88,600 miles	150,000 miles
		Sprinter, MY 15	67,800 miles	At least 62,800 miles	150,000 miles
		Sprinter, MY16	42,100 miles	At least 37,100 miles	150,000 miles
Emission Modification Category 4	OM642	GL350, MY 13	81,700 miles	At least 76,700 miles	At least 50,000 and up to 120,000 miles
		GL350, MY 14	68,500 miles	At least 63,500 miles	At least 51,500 and up to 120,000 miles
		GL350, MY 15	55,000 miles	At least 50,000 miles	At least 65,000 and up to 120,000 miles
		GL350, MY 16	40,700 miles	At least 35,700 miles	At least 79,300 and up to 120,000 miles

<u>Emission Modification Category</u>	<u>Engine</u>	<u>Model MY</u>	<u>Median Mileage</u>	<u>Minimum Vehicle Mileage at Start of Testing</u>	<u>ATS Mileage After Aging and Stabilization, Per Paragraph 1.e for Emission and PEMS Testing</u>
Emission Modification Category 5	OM642	ML320, MY 09	120,400 miles	At least 115,400 miles	At least 50,000 and up to 120,000 miles
		ML350, MY 10	110,900 miles	At least 105,900 miles	At least 50,000 and up to 120,000 miles
		ML350, MY 11	97,600 miles	At least 92,600 miles	At least 50,000 and up to 120,000 miles
Emission Modification Category 6	OM642	S350, MY 12	77,900 miles	At least 72,900 miles	At least 50,000 and up to 120,000 miles
		S350, MY 13	62,400 miles	At least 57,400 miles	At least 57,600 and up to 120,000 miles
Emission Modification Category 7	OM642	E350, MY 13	65,200 miles	At least 60,200 miles	At least 54,800 and up to 120,000 miles
Emission Modification Category 8	OM642	E350, MY 11	91,100 miles	At least 86,100 miles	At least 50,000 and up to 120,000 miles
		E350, MY 12	78,900 miles	At least 73,900 miles	At least 50,000 and up to 120,000 miles
Emission Modification Category 9	OM651	GLK250, MY 13	69,400 miles	At least 64,400 miles	At least 50,600 and up to 120,000 miles
		GLK250, MY 14	60,700 miles	At least 55,700 miles	At least 59,300 and up to 120,000 miles
		GLK250, MY 15	46,800 miles	At least 41,800 miles	At least 73,200 and up to 120,000 miles
Emission Modification Category 10	OM651	GLE300, MY 16	38,700 miles	At least 33,700 miles	150,000 miles
Emission Modification Category 11	OM651	ML250, MY 15	52,000 miles	At least 47,000 miles	At least 68,000 and up to 120,000 miles

<u>Emission Modification Category</u>	<u>Engine</u>	<u>Model MY</u>	<u>Median Mileage</u>	<u>Minimum Vehicle Mileage at Start of Testing</u>	<u>ATS Mileage After Aging and Stabilization, Per Paragraph 1.e for Emission and PEMS Testing</u>
Emission Modification Category 12	OM651	E250 (4x4), MY 14	60,300 miles	At least 55,300 miles	At least 59,700 and up to 120,000 miles
		E250 (4x4), MY 15	44,500 miles	At least 39,500 miles	At least 75,500 and up to 120,000 miles
		E250 (4x4), MY 16	36,800 miles	At least 31,800 miles	At least 83,200 and up to 120,000 miles

Table 2. OBD Demonstration Vehicles

<u>OBD Cluster</u>	<u>Emission Modification Category</u>	<u>Engine</u>	<u>Model, MY</u>	<u>ATS Mileage After Aging, Per Paragraph 1.e</u>
1	Emission Modification Categories 1 and 2	OM642	N/A; EPTV for Emission Modification Category 1 tested	
2	Emission Modification Category 3	OM651	Sprinter, MY 14-16	150,000 miles
3	Emission Modification Categories 4 and 6	OM642	GL350, MY 13-16	120,000 miles
4	Emission Modification Categories 5, 7 and 8	OM642	ML320, MY09 ML350, MY 10-11	120,000 miles
5	Emission Modification Categories 9, 10, 11, 12	OM651	GLK250, MY 13-15	120,000 miles

Attachment B Sample Signal Data

Description	Signal Name	Minimum Data Rate
Vehicle Speed		
Engine Speed		
Transmission Gear		
Diesel Injection Quantity		
Pilot 1 Injection Proportion		
Pilot 2 Injection Proportion		
Main Injection Proportion		
Close Post Injection Proportion		
Far Post Injection Proportion		
Pilot 1 Injection Timing		
Pilot 2 Injection Timing		
Main Injection Timing		
Close Post Injection Timing in normal mode		
Close Post Injection Timing in RGN/CldStart mode		
Far Post Injection Timing		
Engine Operating States / Mode		
(EGTM, ColdStart, Normal, etc.)		
Estimated Exhaust Mass Flow after turbine		

Description	Signal Name	Minimum Data Rate
Coolant Temperature		
Coolant Temperature		
Ambient Temperature		
Intake Temperature		
Ambient Pressure		
Intake Air Flow (MAF)		
Post CAC Pressure		
Post CAC Temperature		
SCR Dosing Release Conditions		
SCR Dosing State		
SCRFFC Dosing Mode		
SCRFFC Dosing Mode Bits		
SCRFFC Dosing Mode Bit 1 information		
SCRFFC Dosing Mode Bit 7 information		
SCRFFC Dosing Mode Bit 12 information		
SCRFFC Dosing Mode Bit 13 information		
SCRFFC Dosing Mode Bit 14 information		
SCRFFC Bit 12 Temperature Thresholds		
SCRFFC Bit 13 Integrator Value		

Description	Signal Name	Minimum Data Rate
SCR Estimated NO ₂ :NO _x Ratio		
SCR Upstream NO _x Sensor Concentration		
SCR Downstream NO _x Sensor Concentration		
SCR Upstream Temperature		
SCR Downstream Temperature		
DPF Soot Load		
SCR Dosing Modification by OBD		
SCR Feed Forward Dosing Estimate		
SCR Target NH ₃ Fill Level		
SCR Estimated NH ₃ Fill Level		
SCR Alternate PreCtl Target Efficiency		
SCR Estimated Conversion Efficiency		
SCR Fill Level Adjustment (Heat Flux Integrator)		
Temporarily added NH ₃ dosing quantity based on Heat Flux Integral		
SCR Fill Level Adjustment based on Heat Flux Integral		
SCR Dosing Adjustment Applied by Load Governor		

Description	Signal Name	Minimum Data Rate
SCR total dosing amount request		
SCR total dosing amount		
SCR Adaptation State		
NOEA State		
Normalized ATS Performance		
Start of Injection Adjustment by PM/CO2/NOx Tradeoff Strategy		
Start of Injection Adjustment by Engine temperature in normal mode		
Start of Injection Adjustment by Engine temperature in CldStrt mode		
Start of Injection Adjustment for Post CAC temperature in normal mode		
Start of Injection Adjustment for Post CAC temperature in CldStrt mode		
Start of Injection Adjustment for stabilization by engine temperature and time after start		
Commanded EGR		
Adjustment to EGR by PM/CO2/NOx Tradeoff Strategy		

Description	Signal Name	Minimum Data Rate
Adjustment to EGR by Cold/Hot Engine Operation normal mode		
Adjustment to EGR by Cold Engine Operation CldStrt mode		
Adjustment to EGR by Post CAC temperature in Normal Mode		
Adjustment to EGR by Post CAC temperature in CldStrt Mode		
EGR Cooler Bypass Status		
Air path adaption state Idle		
Air path adaption state Load 1		
Air path adaption state Load 2		
Normalized Intake Temperature		
DOC inlet temperature		
DPF inlet temperature		
Enhanced DOC temperature		
Air Mass Setpoint		
Air Mass Setpoint correction by coolant temperature in CldStrt Mode		
Air Mass Setpoint correction by Post CAC temperature in CldStrt Mode		

Description	Signal Name	Minimum Data Rate
Close post correction by coolant temperature in CldStrt Mode		
Close post correction by post CAC temperature in CldStrt Mode		
IGR target taking after taking into consideration high altitude base map interpolation		
IGR target correction for high altitude operation		
IGR target taking after taking into consideration high altitude base map interpolation		
IGR target correction for high altitude operation		
Surge prevention is active/transient		
Surge prevention is active/highly transient		
Actuator Turbocharger HP		
Actuator Turbocharger LP		
Actuator EGR-Valve		
Actuator Throttle-Valve		
Derating engine torque limitation based on oil temperature		
Derating engine torque limitation based on coolant temperature		
EGR setpoint limitation by Lambda Min / Surge Protection		

Description	Signal Name	Minimum Data Rate
EGR Cooler bypass reason		
Base IGR set point normal mode		
Base EGR set point CldStrt mode		
Final IGR/EGR set point before IGR to EGR calculation and limitation		
Base rail pressure set point Normal mode		
Base rail pressure set point CldStrt mode		
Rail Pressure		
Rail pressure set point		
Swirl valve position		
Base Swirl valve set point Normal mode		
Final corrected Swirl valve set point Normal mode		
Base Swirl valve set point CldStrt mode		
Final corrected Swirl valve set point CldStrt mode		
Boost pressure target		
Boost pressure target before limitation		
Base Start of injection timing Normal mode		
Base Start of injection timing CldStrt mode		
Base Pilot 2 injection quantity Normal mode		

Description	Signal Name	Minimum Data Rate
Base Pilot 2 injection quantity CldStrt mode		
Base Pilot 1 injection quantity Normal mode		
Base Pilot 1 injection quantity CldStrt mode		
Engine State		
SCR Temperature average		
Aging DOC factor		
Aging DPF factor		
Aging SCR factor		
DOC aging factor for HC oxidation		
DPF aging factor for HC oxidation		
DPF aging factor for NO2 generation		
SCR catalyst aging factor		
Exhaust gas flow volume scaled		
DPF pressure difference scaled		
DPF pressure difference		
DPF inlet pressure		
Exhaust gas flow volume		
Expected difference pressure		
Status flag DPF regeneration		
Continuous simulated Soot mass		
Distance since last regeneration		

Description	Signal Name	Minimum Data Rate
Fuel consumed since the last DPF change		
DPF backpressure curve without soot (DPF_Mon Parameter A)		
DPF backpressure curve without soot (DPF_Mon Parameter B)		
DPF Surface Temperature		
DPF Simulation active		
EGR delayed activation in overrun for NO _x sensor monitor		
Status NO _x -Sensor SCR upstream		
Status NO _x -Sensor SCR downstream		
NO _x -Sensor SCR upstream massflow		
NO _x -Sensor SCR upstream Concentration for Dosing Control		
NO _x -Sensor SCR downstream massflow		
Estimated NO _x Downstream Emission		
Calculated SCR efficiency based on NO _x sensors		
Stoichiometric Factor NH ₃ to NO _x		
Maximum possible NH ₃ Load		

Description	Signal Name	Minimum Data Rate
Maximum possible NH3 Dosing amount limited by hydrolysis		
Inhibit FID for Adaption (OBD failure concerned)		
Load ratio of NH3-Load of SCR Catalyst		
Factor for PM/CO2/NOx Tradeoff Strategy based on SCR Cat Temp and DPF condition value		
Factor for PM/CO2/NOx Tradeoff Strategy based on DOC inlet Temp an DOC aging		
DPF condition Value for PM/CO2/NOx Tradeoff Strategy		
State of Fast Adaption		
Vehicle Odometer start Fast Adaption		
Counter of Fast Adaption		
Status if DiffPreCtlfstAdap is in range		
Inhibit of Fast Adaption		
Target NOx mass flow in Fast Adaption		
Target Conversion Efficiency in Fast Adaption		
SCR Adaption factor		
NOx mass threshold for conditioning before adaption		

Description	Signal Name	Minimum Data Rate
Status change Adaption factor in Adaption State5		
Global release mask for Adaption		
Adaption factor in PreCtl Mode		
Optimal Adaption factor		
Ratio Adaption factor		
Optimal Adaption factor per driving cycle		
Adaption - Max limit funnel		
Adaption - weighting factor		
NOx mass for calculation of optimal Adaption factor		
State release of optimal Adaption factor		
State reset of Fast Adaption		
State reset of optimal Adaption factor		
State mask reset of Fast Adaption		
Output values Fast Adaption		
State Refill signal freeze active		
Release of Adaption		
Request mask of Fast Adaption		
Flag for stop of conditioning by efficiency monitoring		

Description	Signal Name	Minimum Data Rate
Vehicle odometer		
Fault memory information		

Attachment C Special Cycles

Special Cycle A – Cold

Prep and soak for FTP per federal regulations and Test Protocol Paragraph 2.a.ii. Perform an FTP Phase 1 (505 s), immediately followed by six repetitions of FTP Phase 2 (869 s).

There shall be no engine restarts during the test, though there is a 20 second idle between each bag. Sampling: One bag should be sampled for each phase of the test, for a total of seven bags.

Tests shall be run in a 4-wheel drive chassis dynamometer with engine hood closed.

Special Cycle A – Hot

Defendants shall use a vehicle-speed proportional fan for this test.

Perform a US06, followed by another US06. Without an engine restart, perform the FTP Phase 1 (505 s), immediately followed by six repetitions of FTP Phase 2 (869 s).

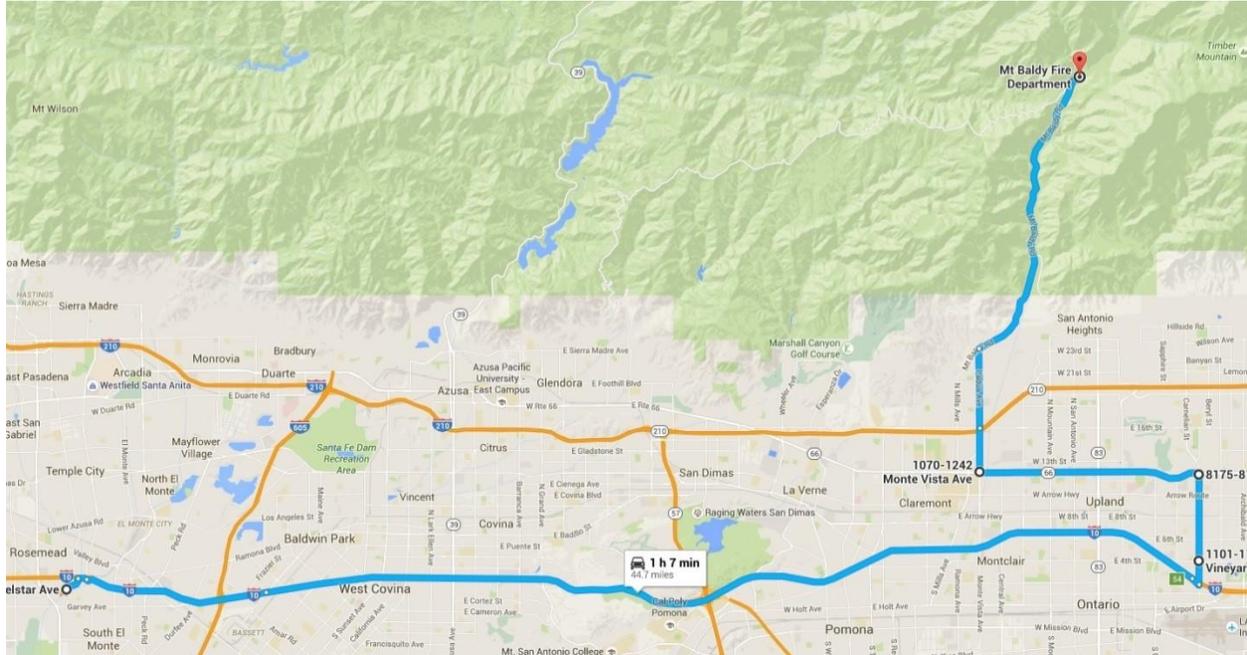
There shall be no engine restarts during the test, though there is a 20 second idle between each bag. Sampling: One bag should be sampled for each phase of the FTP Phase 1 and FTP Phase 2, for a total of seven bags.

Tests shall be run in a 4-wheel drive chassis dynamometer with engine hood closed. For EMC 3, Defendants shall conduct a modified US06 emissions test in accordance with 13 C.C.R. § 1961.2(a)(7)(C) SFTP NMOG+NO_x and CO Exhaust Emission Standards for Medium-Duty Vehicles during the US06 portion of this Special Cycle A.

Attachment D PEMS Routes

**COMBINED TEST ROUTE
(Freeway and Uphill/Downhill)**

OUT-bound



Summary: 44.7 mi (1 hour, 7 min)

Route Parsing

(A0, Drive from engine-on location to start of route)

A1, Free way, ARB to Ontario intersection of East 4 th and Vineyard Avenue (~27.7 miles)

A2, Uphill, East 4 th and Vineyard Avenue to Mount Baldy, Fire Department) (~17 miles)

B1, Downhill, Mount Baldy, Fire Department to East 4th and Vineyard Avenue (~17.9 miles)

B2, Free way, East 4th and Vineyard Avenue to ARB (~28.5 miles)

Depart 9528 Telstar Ave, El Monte CA 91731

Head east on Telstar Ave toward Fletcher Ave

0.4 mi Turn right onto Flair Dr

0.2 mi Turn right to merge onto I-10 E

26.2 mi Take exit 54 for Vineyard Ave

Use the left 2 lanes to turn left onto N Vineyard Ave

Head north on N Vineyard Ave toward E Harvard Privado

4.2 mi Use the left 2 lanes to turn left onto E Foothill Blvd

5.1 mi Turn right onto Monte Vista Ave

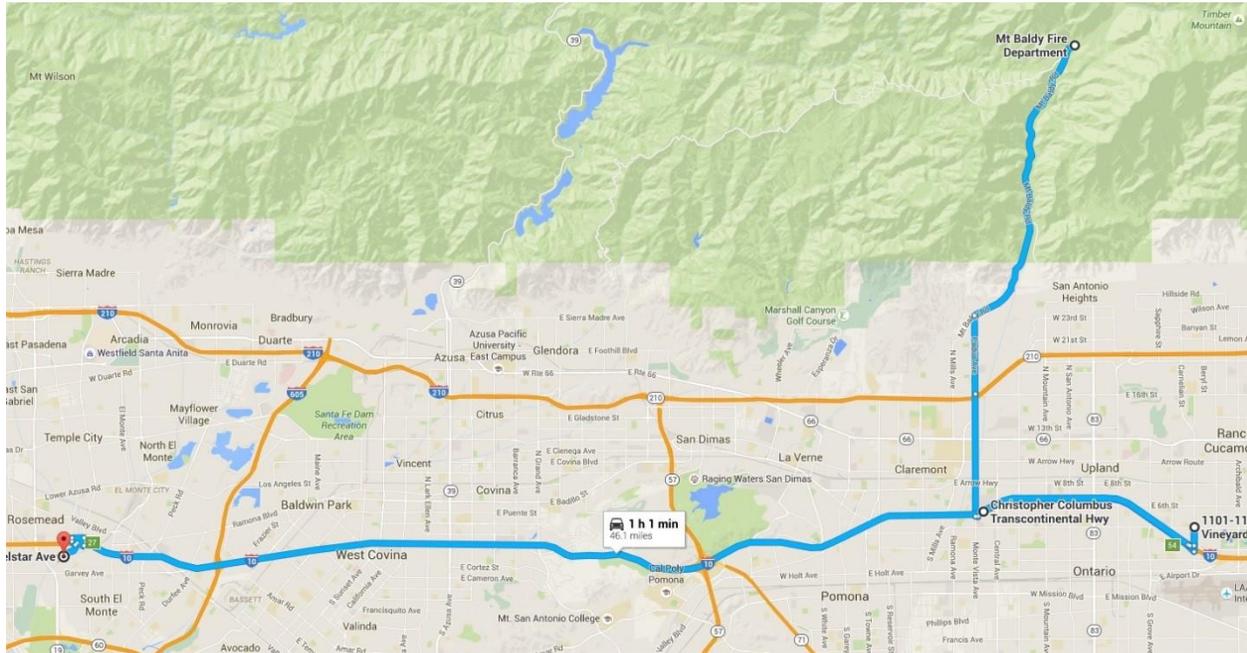
2.8 mi Continue onto Padua Ave

7.2 mi Turn right onto Mt Baldy Rd

Total Distance 44.7 mi

COMBINED TEST ROUTE (CONTINUED)

IN-Bound



Summary: 46.1 mi (61 min)

Depart 6736 Mount Baldy Road, Mount Baldy, CA 91759

Head west on Mt Baldy Rd toward Central Ave

7.2 mi Turn left onto Padua Ave

1.8 mi Continue onto Monte Vista Ave

2.8 mi Turn left onto Palo Verde St

344 ft Use the left 2 lanes to turn left to merge onto I-10 E toward San Bernardino
Head northeast on I-10 E

5.0 mi Take exit 54 for Vineyard Ave

0.2 mi Use the left 2 lanes to turn left onto N Vineyard Ave

Destination will be on the left

1101-1119 N Vineyard Ave, Ontario CA 91764

0.5 mi Get on I-10 W

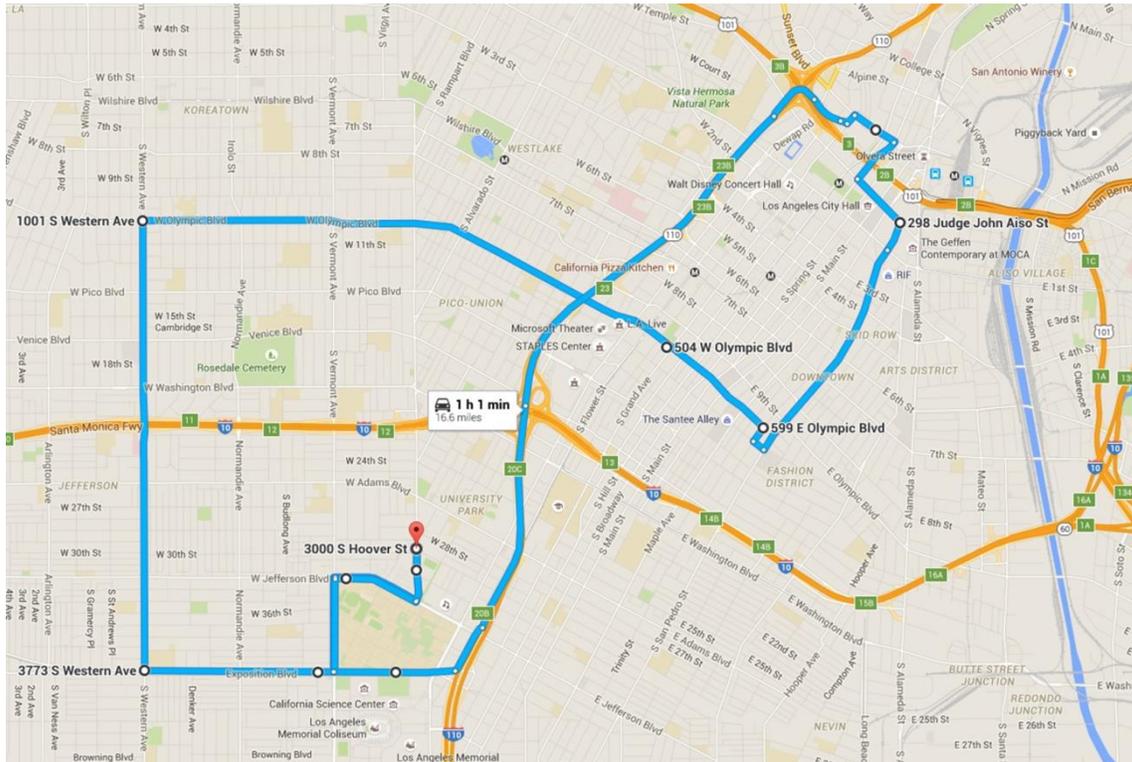
26.5 mi Follow I-10 W to Temple City Blvd in Rosemead. Take exit 27 from I-10 W

1.2 mi Take Loftus Dr to Telstar Ave in El Monte

Total Distance

46.1 mi

URBAN/DOWNTOWN LOS ANGELES ROUTE



Summary: 16.6 miles (61 minutes)

Depart 3000 S Hoover St, Los Angeles, CA 90007

Head south on S Hoover St

- | | |
|---|---|
| <p>0.5mi Turn RIGHT on W Jefferson Blvd</p> <p>0.4mi Turn LEFT on S. Vermont Ave.</p> <p>0.5mi Turn RIGHT on W. Exposition Blvd.</p> <p>1.0mi Turn RIGHT on S. Western Ave.</p> <p>2.4mi Turn RIGHT onto W. Olympic Blvd.</p> <p>3.6mi Turn RIGHT onto San Julian St.</p> <p>446ft Turn LEFT onto E. 11th St.</p> <p>361ft Turn LEFT onto S. San Pedro St.</p> <p>1.2mi Continue STRAIGHT as S. San Pedro St. becomes Judge John Aiso St.</p> | <p>0.3mi Use the second turn lane from the left to turn LEFT onto N. Grand Ave.</p> <p>276ft Turn RIGHT onto the CA-110/I-110 fwy ramp</p> <p>82ft Keep RIGHT at the fork and follow the signs for CA-110/I-110</p> <p>0.2mi Keep LEFT at the second fork and follow the sign for I-110 South - San Pedro</p> <p>0.3mi Merge LEFT onto the I-110 South - San Pedro</p> <p>1.5mi Continue on the CA-110 South/I-110 South towards Exposition Blvd. Take Exit 20 B from I-110 S</p> <p>1.8mi Take the Exposition Blvd. Exit (20B)</p> <p>0.3mi Use the right two lanes to slightly turn and continue STRAIGHT on W. Exposition Blvd.</p> <p>0.6mi Turn RIGHT onto S. Vermont Ave.</p> |
|---|---|

0.2mi Turn **LEFT** on E. Temple St.

0.3mi Turn **RIGHT** onto N. Broadway

0.3mi Turn **LEFT** onto W. Cesar E. Chavez Ave.

0.5mi Turn **RIGHT** onto W. Jefferson Blvd.

0.4mi **850 W Jefferson Blvd, Los Angeles, CA 90007**

Attachment E Data Parameters for Flat Files

PEMS Parameters

VEHICLE_ID
VIN
TEST_ID
VEH_DESC
MODEL_YEAR
ENGINE_FAMILY
VEHICLE CATEGORY (1-12)
OBD GROUP (1-5)
BASELINE_FINAL_CONFIGURATION (B/F)
ROUTE
ROUTE_SEGMENT (A0,A1,A2,B1,B2,DT)
START_DATE
START_TIME
START_ODOMETER
GRAMS_PER_MILE_HC
GRAMS_PER_MILE_CO
GRAMS_PER_MILE_NO
GRAMS_PER_MILE_NO2
GRAMS_PER_MILE_CO2
VOL_MPG
DISTANCE
REGEN_EVENT
COMMENTS

Dynamometer Parameters

VEHICLE_ID
VIN
TEST_ID
TEST_TYPE
PHASE_NUMBER/BAG_NUMBER
VEH_DESC
MODEL_YEAR
ENGINE_FAMILY
VEHICLE CATEGORY (1-12)
OBD GROUP (1-5)
BASELINE_FINAL_CONFIGURATION (B/F)
FUEL_TYPE
LOCATION
FACILITY
CELL_TEMP_SET_PT
ALTITUDE_SET_PT
HUM_SET_PT
START_DATE
START_TIME
START_ODOMETER
GRAMS_PER_MILE_THC
GRAMS_PER_MILE_CO
GRAMS_PER_MILE_NOX
GRAMS_PER_MILE_CO2
GRAMS_PER_MILE_NMHC
GRAMS_PER_MILE_CH4
GRAMS_PER_MILE_NMOG+NOX
GRAMS_PER_MILE_N2O
VOL_MPG
DISTANCE
GRAMS_PER_MILE_WT_THC
GRAMS_PER_MILE_WT_CO
GRAMS_PER_MILE_WT_NOX
GRAMS_PER_MILE_WT_CO2
GRAMS_PER_MILE_WT_NMHC
GRAMS_PER_MILE_WT_CH4
GRAMS_PER_MILE_WT_NMOG+NOX
GRAMS_PER_MILE_WT_N2O
WT_VOL_MPG
LAB_QC_STATUS
REGEN_EVENT
COMMENTS

DEF Dilution Inducement Strategy Parameters

VEHICLE_ID
VIN
TEST_ID
TEST_TYPE
PHASE_NUMBER/BAG_NUMBER
VEH_DESC
MODEL_YEAR
ENGINE_FAMILY
VEHICLE CATEGORY (1-12)
OBD GROUP (1-5)
BASELINE_FINAL_CONFIGURATION (B/F)
FUEL_TYPE
LOCATION
FACILITY
CELL_TEMP_SET_PT
ALTITUDE_SET_PT
HUM_SET_PT
START_DATE
START_TIME
START_ODOMETER
GRAMS_PER_MILE_THC
GRAMS_PER_MILE_CO
GRAMS_PER_MILE_NOX
GRAMS_PER_MILE_CO2
GRAMS_PER_MILE_NMHC
GRAMS_PER_MILE_CH4
GRAMS_PER_MILE_NMOG+NOX
GRAMS_PER_MILE_N2O
VOL_MPG
DISTANCE
GRAMS_PER_MILE_WT_THC
GRAMS_PER_MILE_WT_CO
GRAMS_PER_MILE_WT_NOX
GRAMS_PER_MILE_WT_CO2
GRAMS_PER_MILE_WT_NMHC
GRAMS_PER_MILE_WT_CH4
GRAMS_PER_MILE_WT_NMOG+NOX
LAB_QC_STATUS
REGEN_EVENT
DEF DILUTION (%)
INDUCEMENT DETECTION (WITHIN 1 Hour)
FINAL INDUCEMENT START TIME
COMMENTS

Attachment F Testing: Overview

FTP75 – HWFET – US06	A) HWFET for warm-up followed by coast down – HWFET with DPF Regeneration (EPTV2 only) – FTP 72 Prep Cycle as preconditioning	
	B) FTP 75 – HWFET, HWFET – US06, US06 – FTP 72 Prep Cycle	
	C) FTP 75 – HWFET, HWFET – US06, US06 – FTP 72 Prep Cycle	
	D) FTP 75 – HWFET, HWFET – US06, US06	
SC03 (on climatic dyno)	A) SC03 – 10 min. soak – SC03	
	B) SC03 – 10 min. soak – SC03	
	C) SC03 – 10 min. soak – SC03	
FTP75 20°F (on climatic dyno)	A) HWFET for warm-up followed by specific coast down for 20 °F	
	B) FTP 75 @ 20 °F	
Special Cycles [Att. C]	Cold	A) FTP72 (preconditioning)
		B) FTP Phase 1 (cold) – 6x FTP Phase 2
	Hot	C) US06 – US06 – FTP Phase 1, 6x FTP Phase 2
PEMS [Att. D]	A) PEMS technical check (function & communication) – max. 30 mi on-road driving, 12-hour soak	
	B) Combined Uphill/Downhill and Highway Route (~26mi from LATC (cold) to starting point – 44.7 mile outbound – 46.1 mile inbound)	
	C) Urban/Downtown Los Angeles Route (16.6 mile, warm)	

Attachment G NVH Protocol

Procedure for A-to-B Noise, Vibration, and Harshness (“NVH”) Testing

1. Purpose

This test procedure is designed to enable DMB to conduct an evaluation of noise, vibration, and harshness (“NVH”) measurements for informational purposes. Because there is no regulatory standard relating to NVH, this test procedure is not to be used for purposes of vehicle certification or compliance determinations, or for any other purpose. Additionally, because NVH can vary across models, model years, and at different testing intervals, it is expected that performing the same NVH evaluation on different vehicles or on the same vehicle under different circumstances can produce varying results.

2. General Measurement Conditions

All measurements as per Section 3 shall be carried out with an unloaded vehicle. The vehicle is to be filled with the vehicle operator and the measuring equipment. The fuel tank must be full. All measurements as per Section 3 shall be carried out on a test course that is flat, dry, and sufficiently rough to prevent slippage. Gradients of no more than 1.5% are permitted.

The atmospheric air pressure must be between 910 hPa and 1050 hPa, and the ambient temperature must be between 0° C and 30° C. The maximum temperature difference between the individual measurements shall not exceed 5° C. The temperature inside the vehicle cabin shall be between 15 °C and 25 °C. The highest wind speed at 0.7 m above ground must not exceed 3 m/s.

The tire inflation pressure must correspond to the vehicle manufacturer’s specifications as documented on the fuel tank cover. The tire tread depth must be greater than the valid minimum profile depth according to the wear indicator, and the tires must be in good condition. The vehicle shall have tires approved by the manufacturer for use on the specific vehicle, including conforming to the size, load index, and speed rating listed in the operator’s manual.

A commercially available fuel as specified in the operator’s manual for the vehicle in question shall be used. For the baseline testing, the vehicle hardware and software shall correspond to the requirements of Paragraphs 1.a and 1.b of Appendix B (Test Protocol). All vehicle functionalities that consume power (e.g., air conditioning, including fans, and the radio) shall be switched off during the measurement, and the windows and sliding roof must be closed.

2.1 Special Measurement Conditions

- Regeneration Mode is off.
- The DPF should be regenerated through a manually triggered regeneration directly before the measurement. The regeneration will be completed during on-road driving.

- The measurement shall take place with the vehicle warmed up; that is, the vehicle shall have reached stabilized normal operating conditions (for example, with regard to coolant and oil temperatures) before the measurement.
- Measurement equipment: binaural microphone equipment complying with IEC 616732, class 1. The system must be calibrated by an approved laboratory.
- Driver conditions: same driver, same driver seat position (back of the seat must be at the height of the B-pillar), same driver head position (carrying the binaural microphone), same interior loading and setting (same position for all seats and same position for any vehicle contents).
- During the measurements, the driver shall not move his head and must look straight forward.
- The left and right ear positions are to be recorded.
- The drive program shall be the default mode.

3. NVH Testing Procedure

3.1 NVH with Stationary Vehicle

Testing shall be conducted with the engine at idle speed and the transmission in position P.

3.2 NVH While Driving at Constant Speed

Testing shall be conducted at a constant vehicle speed of 25 mph (using cruise control) and the transmission in position D. Measurement time shall not begin until more than 5 seconds have elapsed since the vehicle has reached stable testing conditions. The minimum measurement time is 20 seconds.

The measurements are executed sequentially. No disturbing background-noise is allowed.

4. Realization of Measurement

A distinction is made between the measurements from the stationary (0 mph) and constant driving speed measurements.

The starting and end point of the measurement is the given by the driver with respect to the test track condition and the given vehicle speeds.

For measurements from the stationary state, the vehicle must be in the drive position P and default transmission mode (E) at idle speed. The start-stop system, if present, has to be deactivated.

For measurements with constant speed, the cruise control is set accordingly. The constant speed must be maintained for at least 5 seconds before the driver activates the measurement.

5. Analysis

The results are to be determined from the collected NVH measurement records. Specifically, an acoustic specialist will perform an analysis of each test and determine whether there are any material differences. From the measured period of at least 20 seconds, the acoustic specialist will locate a time interval of about 10 seconds without a noise disturbance from ambient events (e.g., wind, traffic, erratic background noise), and then average the selected interval.

5.1 Plausibility Check of Measurements

DMB retains the discretion to invalidate a measurement if:

- Idle speed is unstable and deviates from a specified value (e.g. raised by on-board electrical system).
- Ambient events influence the NVH measurements (e.g. wind, traffic, erratic background noise).
- The measurement is performed in Regeneration Mode.

5.2 Display of Measurement Results for Comparison

At least 5 measurements will be carried out in the initial (pre-update) condition of the vehicle. The results are to be displayed as a scatter. Two measurements are carried out in the target (updated) condition of the vehicle and the mean value is entered in the scatter.

5.2.1 Evaluation of results

The initial (pre-update) condition and target (updated) condition are to be considered materially the same for purposes of the NVH evaluation if the mean value of the target (updated) state condition is within the scatter of the results for the initial (pre-update) condition, or better.

Attachment H Drivability Protocol

Procedure for A-to-B Drivability Testing

1. Purpose

This test procedure is designed to enable Daimler to conduct an evaluation of the drivability of the tested vehicle using agility measurements for informational purposes. The agility measurements emulate typical driving maneuvers and are described under Section 3. Because there is no regulatory standard relating to drivability, this test procedure is not to be used for purposes of vehicle certification or compliance determinations, or for any other purpose. Additionally, because drivability can vary across models, model years, and at different testing intervals, it is expected that performing the same drivability evaluation on different vehicles or on the same vehicle under different circumstances can produce varying results.

2. General Measurement Conditions

All measurements as per Section 3 shall be carried out with the unloaded vehicle. The vehicle is to be filled with the vehicle operator and the measuring equipment. The fuel tank must be full. All measurements as per Section 3 shall be carried out on a test course, which is flat, dry, and sufficiently rough to prevent slippage. Gradients of no more than 2% are permitted.

The atmospheric air pressure must be between 910 hPa and 1050 hPa, and the ambient temperature must be between 0° C and 30° C. The maximum temperature difference between the measurements in initial state (A) and the update measurements in state (B) shall not exceed 5° C. The highest wind speed at 0.7 m above ground should not exceed 3 m/s.

The tire inflation pressure must correspond to the vehicle manufacturer's specifications as documented on the fuel tank cover, the tire tread depth must be greater than the valid minimum profile depth according to the wear indicator, and the tires must be in good condition. A commercially available fuel in the operator's manual for the vehicle in question shall be used. The cooling and transmission fluid temperatures which occur for normal driving shall be observed. For the baseline testing, the vehicle hardware that is relevant to acceleration and elasticity shall correspond to the series production configuration. All vehicle functionalities that consume power (e.g., air conditioning) shall be switched off during the measurement, and the windows and sliding roof shall be closed.

2.1 Special Measurement Conditions

- Regeneration Mode is off.
- The DPF should be regenerated through a manually triggered regeneration directly before the measurement. The regeneration will be completed during on-

road driving.

- Response times when changing from brake to accelerator must be within defined parameters.
- Before the measurement, the vehicle must be operated with constant speed between 15 and 40 mph for at least 1 minute and after that be at idle speed for 10 s.

3. Acceleration and Elasticity

The acceleration of a vehicle is characterized by the acceleration time. This is the shortest time required for a vehicle to change its speed. The specifications according to Sections 2 and 4 shall be observed. The elasticity is described by the required time for acceleration at an initial speed > 0 mph. The acceleration is determined by the following measurements:

Time taken for acceleration of:

- 0–30 mph (48.3 km/h)
- 0–60 mph (96.6 km/h)
- 0–100 mph (160.9 km/h)
- $\frac{1}{4}$ mile (402m)
- Idle rolling – 60 mph (96.6 km/h)
- 30–50 mph (48.3–80.5 km/h)
- 50–70 mph (80.5–112.7 km/h)

The acceleration time must be measured in both directions of the test course. A measurement is performed in both directions. The measurements in state (A) are performed under different environmental conditions within the ranges specified in Section 2. The measurements in the state (B) are executed sequentially (i.e., each subsequent measurement will be performed after the previous measurement without significant deviations in the environmental conditions).

4. Realization of Measurement

A distinction is made between the measurements from the stationary tests (initial speed of 0 mph) and measurements with an initial speed > 0 mph.

The starting point of the measurement is the time of the accelerator pedal operation. The end point of the measurement is when the target speed is reached (mph).

For measurements from the stationary state (initial speed = 0), the vehicle is in the drive position D and the default transmission mode (E) at idle speed. The start-stop system, if present, has to be deactivated. The brake pedal is actuated in this case (hold function not active). The acceleration is started by a rapid change (< 0.5 s) from the brake pedal to the accelerator pedal. The acceleration has to be done with maximum pedal position (no kick down). The accelerator pedal change from 0% to 100% must take place within 300 ms.

For elasticity measurements (initial speed > 0), there are two categories which have to be

performed: constant speed and idle rolling. In the first category, the initial condition is a constant speed which is implemented by means of cruise control with the respective start speed. The constant speed must be maintained for at least 5 s before the acceleration to maximum pedal position (no kick down). The accelerator pedal change from 0% to 100% must take place within 300 ms.

The measurement with the initial speed idle rolling is defined as follows. The vehicle is in the drive position D and default transmission mode (E) at a standstill ($v = 0$ mph). The brake pedal is released, whereby the vehicle starts rolling in gear range 1 at idle speed. After 5 s, the speed should have reached a steady condition. The maximum pedal position is accelerated from this condition. The accelerator pedal change from 0% to 100% must take place within 300 ms. If the vehicle does not start to roll on its own, the rolling has to be provoked by a minimal gas surge.

In all cases, the measurement shall be performed until the target speed is reached.

4.1 Measurement from Stationary State

The following measurements are carried out from a standstill:

- 0–30 mph (48.3 km/h)
- 0–60 mph (96.6 km/h)
- 0–100 mph (160.9 km/h)
- $\frac{1}{4}$ mile (402m)

4.2 Measurement with Initial Speed > 0 mph

The following measurements have to be performed with an initial speed > 0 mph:

- Idle rolling – 60 mph (96.6 km/h)
- 30–50 mph (48.3–80.5 km/h)
- 50–70 mph (80.5–112.7 km/h)

The measurement with the initial speed “idle rolling” is defined as follows. The vehicle is in the drive position D and default transmission mode (E) at a standstill ($v = 0$ mph). The brake pedal is released, whereby the vehicle starts rolling in gear range 1 at idle speed. After 5 s, the speed should have reached a steady condition. The maximum pedal position is accelerated from this condition. The accelerator pedal change from 0% to 100% must take place within 300 ms. If the vehicle does not start to roll on its own, the rolling has to be provoked by a minimal gas surge.

5. Analysis

The results are to be determined from time measurement records. The drivability evaluation will be based on the accelerator pedal value and the vehicle speed (display head unit) value. In addition, the following parameters (with sampling rate ≤ 20 ms) are to be measured for the plausibility check:

- Brake pressure (system)
- Brake pressure (driver)
- Wheel speeds
- Gear signal
- Fuel mass
- Engine speed
- Engine oil temperature
- Coolant temperature
- Regeneration mode
- Kick down signal
- Ambient temperature

The parameters can be measured directly from the engine control unit or via the CAN by calibration tools. Starting time is when the pedal value is greater than zero, and the end point is the time of the required speed for the first time.

The times determined are to be rounded to 0.1 s. For the measurement “¼ mile (402m),” the distance traveled is to be determined via the integration of the speed signal.

5.1 Plausibility Check of Measurements

Daimler retains the discretion to invalidate a measurement if:

- General measurement conditions in Section 2 were violated.
- The measurement was not performed until the target speed was reached.
- Response time when changing from brake to accelerator is longer than 0.5 s.
- Before the measurement, the vehicle was operated with constant speed between 15 and 40 mph for less than 1 minute and after that less than 10 s in idle speed.
- The accelerator pedal change from 0% to 100% lasts longer than 300 ms.
- The constant speed was maintained for less than 5 s before acceleration to the maximum pedal position.
- The acceleration was done with kick down.
- The stationary measurement was performed with a speed greater than 0 mph.
- Transmission mode was not E.
- Start-Stop system was active.
- Spinning wheels are detected.
- Idle speed is unstable and deviates from a specified value (e.g., raised by on-board electrical system).
- Braking torque system is greater than zero at the time of the accelerator pedal actuation.
- The measurement is performed in Regeneration Mode.

5.2 Display of Measurement Results for Comparison

At least 5 valid measurements are to be carried out in the initial (pre-update) condition (A) of the

vehicle. The results are to be displayed as a scatter. At least 2 valid measurements are to be carried out in the target (updated) condition (B) of the vehicle and the mean value is entered in the scatter.

5.2.1 Evaluation of results

The initial (pre-update) condition and target (updated) condition are to be considered materially the same for purposes of the drivability evaluation if the mean value of the target (updated) state condition is within the scatter of the results for the initial (pre-update) condition, or better.

Attachment I

Emission Modification Configuration Components

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
GL320	2009	9MBXT03.0U2B	Federal Tier 2 Bin 5 LDT4 (ALVW >5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) ECU Copper SCR Catalyst DOC DPF	5	August 30, 2021	4
ML320 R320	2009	9MBXT03.0U2A	Federal Tier 2 Bin 5 LDT3 (ALVW 3751- 5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) ECU Copper SCR Catalyst DOC DPF	5	August 30, 2021	4
GL350	2010	AMBXT03.0U2B	Federal Tier 2 Bin 5 LDT4 (ALVW >5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) ECU Copper SCR Catalyst DOC DPF	5	August 30, 2021	4
ML350 R350	2010	AMBXT03.0U2A	Federal Tier 2 Bin 5 LDT3 (ALVW 3751- 5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) ECU Copper SCR Catalyst DOC DPF	5	August 30, 2021	4

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
Sprinter 6-cyl. (OM642), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2010	AMBXT03.0HD1	Federal HDV 40 C.F.R. § 1816-08 (8500-10000 GVWR) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) ECU Copper SCR Catalyst Instrument Cluster if existing part number is 9069018200 or 9069018600	2	Prior to signature	1
Sprinter 6-cyl. (OM642), 5T (Freightliner 3500, Sprinter 3500 CDI)	2010	AMBXT03.0HD2	Federal HDV 40 C.F.R. § 1816-08 (10001-14000 GVWR) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) ECU Copper SCR Catalyst Instrument Cluster if existing part number is 9069018200 or 9069018600	2	Prior to signature	1
E350	2011	BMBXV03.0U2B	Federal Tier 2 Bin 5 LDV CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) ECU Copper SCR Catalyst DOC DPF Conversion of Lambda sensor to plug	8	October 4, 2021	4

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
GL350 4MATIC	2011	BMBXT03.0U2B	Federal Tier 2 Bin 5 LDT4 (ALVW >5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) ECU Copper SCR Catalyst DOC DPF	5	August 30, 2021	4
ML350 4MATIC R350 4MATIC	2011	BMBXT03.0U2A	Federal Tier 2 Bin 5 LDT3 (ALVW 3751- 5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) ECU Copper SCR Catalyst DOC DPF	5	August 30, 2021	4
Sprinter 6-cyl. (OM642), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI	2011	BMBXT03.0HD1	Federal HDV 40 C.F.R. § 1816-08 (8500-10000 GVWR) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) ECU Copper SCR Catalyst Instrument Cluster if existing part number is 9069018200 or 9069018600	2	Prior to signature	1

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
Sprinter 6-cyl. (OM642), 5T (Freightliner 3500, Sprinter 3500 CDI)	2011	BMBXT03.0HD2	Federal HDV 40 C.F.R. § 1816-08 (10001-14000 GVWR) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) ECU Copper SCR Catalyst Instrument Cluster if existing part number is 9069018200 or 9069018600	2	Prior to signature	1
E350 BLUETEC	2012	CMBXV03.0U2B	Federal Tier 2 Bin 5 LDV CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) ECU Copper SCR Catalyst DOC DPF Conversion of Lambda sensor to plug	8	October 4, 2021	4
GL350 BLUETEC 4MATIC R350 BLUETEC 4MATIC	2012	CMBXT03.0U2B	Federal Tier 2 Bin 5 LDT4 (ALVW >5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) ECU Copper SCR Catalyst DOC DPF	5	August 30, 2021	4

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
ML350 4MATIC	2012	CMBXT03.0U2A	Federal Tier 2 Bin 5 LDT4 (ALVW >5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) Copper SCR Catalyst DOC DPF Coolant thermostat if existing part number is A6422001915	4	September 28, 2020	3
S350 4MATIC	2012	CMBXV03.0U2A	Federal Tier 2 Bin 5 LDV CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) Copper SCR Catalyst DOC DPF Conversion of Lambda sensor to plug Coolant thermostat if existing part number is A6422001915	6	November 8, 2021	3

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
Sprinter 6-cyl. (OM642), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2012	CMBXT03.0HD1	Federal HDV 40 C.F.R. § 1816-08 (8500-10000 GVWR) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) ECU Copper SCR Catalyst Instrument Cluster if existing part number is 9069018200 or 9069018600	2	Prior to signature	1
Sprinter 6-cyl. (OM642), 5T, (Freightliner 3500, Sprinter 3500 CDI)	2012	CMBXT03.0HD2	Federal HDV 40 C.F.R. § 1816-08 (10001-14000 GVWR) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) ECU Copper SCR Catalyst Instrument Cluster if existing part number is 9069018200 or 9069018600	2	Prior to signature	1
E350	2013	DMBXV03.0U2B	Federal Tier 2 Bin 5 LDV CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) Copper SCR Catalyst DOC DPF Conversion of Lambda sensor to plug	7	October 4, 2021	4

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
GL350 BLUETEC 4MATIC ML350 BLUETEC 4MATIC	2013	DMBXT03.0U2A	Federal Tier 2 Bin 5 LDT4 (ALVW >5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) PM sensor Copper SCR Catalyst DOC Coolant thermostat if existing part number is A6422001915	4	September 28, 2020	3
GLK250 4MATIC (OM651)	2013	DMBXT02.2U2A	Federal Tier 2 Bin 5 LDT2 (LVW 3751-5750, GVW <6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) PM sensor Copper SCR catalyst DOC DPF Conversion of Lambda sensor to plug HCU	9	Prior to signature	5

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
GL350 BLUETEC 4MATIC ML350 BLUETEC 4MATIC	2013	DMBXT03.0U2C	Federal Tier 2 Bin 5 LDT4 (ALVW >5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) PM sensor Copper SCR Catalyst DOC DPF Coolant thermostat if existing part number is A6422001915	4	September 28, 2020	3
S350 4MATIC	2013	DMBXV03.0U2A	Federal Tier 2 Bin 5 LDV CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) Copper SCR Catalyst DOC DPF Conversion of Lambda sensor to plug Coolant thermostat if existing part number is A6422001915	6	November 8, 2021	3

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
Sprinter 6-cyl. (OM642), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2013	DMBXT03.0HD1	HDV1 (Federal HD chassis Class 2b GVW 8,501-10000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) Copper SCR Catalyst Instrument Cluster if existing part number is 9069018200 or 9069018600	1	Prior to signature	1
Sprinter 6-cyl. (OM642), 5T (Freightliner 3500, Sprinter 3500 CDI)	2013	DMBXT03.0HD2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) Copper SCR Catalyst Instrument Cluster if existing part number is 9069018200 or 9069018600	1	Prior to signature	1
E250 (OM651) E250 4MATIC (OM651)	2014	EMBXJ02.2U2A	Federal Tier 2 Bin 5 LDV CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) PM sensor Copper SCR Catalyst DOC DPF Conversion of Lambda sensor to plug	12	November 2, 2020	5

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
GL350 4MATIC ML350 4MATIC	2014	EMBXT03.0U2A	Federal Tier 2 Bin 5 LDT4 (ALVW >5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) PM sensor Copper SCR Catalyst DOC DPF <u>Coolant thermostat if existing part number is A6422001915</u>	4	September 28, 2020	3
GLK250 (OM651)	2014	EMBXJ02.2U2A	Federal Tier 2 Bin 5 LDV/LDT2 CA LEV-II ULEV	ECU, TCU, DCU	DOC DPF Copper SCR catalyst NOx sensors (TT3) PM sensor Conversion of Lambda sensor to plug	9	Prior to signature	5
Sprinter 4-cyl. (OM651), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2014	EMBXT02.2HD1	HDV1 (Federal HD chassis Class 2b GVW 8501- 10000) CA LEV- III ULEV250	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	3	Within 30 Days of approval of the MY2020 4-cyl. Sprinter, but no later than December 21, 2020	2

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
Sprinter 4-cyl. (OM651), 5T (Freightliner 3500, Sprinter 3500 CDI)	2014	EMBXT02.2HD2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-III ULEV400	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	3	Within 30 Days of approval of the MY2020 4-cyl. Sprinter, but no later than December 21, 2020	2
Sprinter 6-cyl. (OM642), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2014	EMBXT03.0HD1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) Copper SCR Catalyst Instrument Cluster if existing part number is 9069018200 or 9069018600	1	Prior to signature	1
Sprinter 6-cyl. (OM642), 5T (Freightliner 3500, Sprinter 3500 CDI)	2014	EMBXT03.0HD2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) Copper SCR Catalyst Instrument Cluster if existing part number is 9069018200 or 9069018600	1	Prior to signature	1

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
E250 (OM651) E250 4MATIC (OM651)	2015	FMBXJ02.1U2A	Federal Tier 2 Bin 5 LDV CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) PM sensor Copper SCR Catalyst DOC DPF Conversion of Lambda sensor to plug	12	November 2, 2020	5
GL350	2015	FMBXT03.0U2A	Federal Tier 2 Bin 5 LDT4 (ALVW >5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) PM sensor Copper SCR Catalyst DOC DPF Coolant thermostat if existing part number is A6422001915	4	September 28, 2020	3
GLK250 (OM651)	2015	FMBXJ02.1U2A	Federal Tier 2 Bin 5 LDV/LDT2 CA LEV-II ULEV	ECU, TCU, DCU	DOC DPF Copper SCR catalyst NOx sensors (TT3) PM sensor Conversion of Lambda sensor to plug	9	Prior to signature	5

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
ML250 (OM651)	2015	FMBXT02.1U2A	Federal Tier 2 Bin 5 LDT3 (ALVW 3751-5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) PM sensor Copper SCR Catalyst DOC DPF Conversion of Lambda sensor to plug	11	Prior to signature	5
Sprinter 4-cyl. (OM651), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2015	FMBXT02.1HD1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000) CA LEV-III ULEV250	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	3	Within 30 Days of approval of the MY2020 4-cyl. Sprinter, but no later than December 21, 2020	2
Sprinter 4-cyl. (OM651), 5T (Freightliner 3500, Sprinter 3500 CDI)	2015	FMBXT02.1HD2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-III ULEV400	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	3	Within 30 Days of approval of the MY2020 4-cyl. Sprinter, but no later than December 21, 2020	2
Sprinter 4-cyl. (OM651), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2015	FMBXT02.1HD3	HDV1 (Federal HD chassis Class 2b GVW 8501-10000) CA LEV-III SULEV170	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	3	Within 30 Days of approval of the MY2020 4-cyl. Sprinter, but no later than December 21, 2020	2

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
Sprinter 4-cyl. (OM651), 5T (Freightliner 3500, Sprinter 3500 CDI)	2015	FMBXT02.1HD4	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-III SULEV230	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	3	Within 30 Days of approval of the MY2020 4-cyl. Sprinter, but no later than December 21, 2020	2
Sprinter 6-cyl. (OM642), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2015	FMBXT03.0HD1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) Copper SCR Catalyst	1	Prior to signature	1
Sprinter 6-cyl. (OM642), 5T (Freightliner 3500, Sprinter 3500 CDI)	2015	FMBXT03.0HD2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3) Copper SCR Catalyst	1	Prior to signature	1
Sprinter 6-cyl. (OM642), 3.88T (Freightliner 2500 4x4, Sprinter 2500 CDI 4x4)	2015	FMBXT03.0HD3	HDV1 (Federal HD chassis Class 2b GVW 8501-10000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	1	Prior to signature	1
Sprinter 6-cyl. (OM642), 5T (Freightliner 3500 4x4, Sprinter 3500 CDI 4x4)	2015	FMBXT03.0HD4	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	1	Prior to signature	1

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
E250 (OM651) E250 4MATIC (OM651)	2016	GMBXV02.1U2B	Federal Tier 2 Bin 5 LDV CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) Copper SCR Catalyst DOC DPF Conversion of Lambda sensor to plug	12	November 2, 2020	5
GL350 BLUETEC 4MATIC	2016	GMBXT03.0U2A	Federal Tier 2 Bin 5 LDT4 (ALVW >5750, GVW >6000) CA LEV-II ULEV	ECU, TCU, DCU	NOx sensors (TT3) PM sensor Copper SCR Catalyst DOC DPF Coolant thermostat if existing part number is A6422001915	4	September 28, 2020	3
GLE300 d 4MATIC (OM651)	2016	GMBXT02.1U2A	Federal Tier 3 Bin 125 CA LEV-III ULEV125	ECU, TCU, DCU	NOx sensors (TT3) Conversion of Lambda sensor to plug	10	Prior to signature	5

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
Sprinter 4-cyl. (OM651), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2016	GMBXT02.1HD1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000) CA LEV-III ULEV250	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	3	Within 30 Days of approval of the MY2020 4-cyl. Sprinter, but no later than December 21, 2020	2
Sprinter 4-cyl. (OM651), 5T (Freightliner 3500, Sprinter 3500 CDI)	2016	GMBXT02.1HD2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-III ULEV400	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	3	Within 30 Days of approval of the MY2020 4-cyl. Sprinter, but no later than December 21, 2020	2
Sprinter 4-cyl. (OM651), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2016	GMBXT02.1HD3	HDV1 (Federal HD chassis Class 2b GVW 8501-10000) CA LEV-III SULEV170	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	3	Within 30 Days of approval of the MY2020 4-cyl. Sprinter, but no later than December 21, 2020	2
Sprinter 4-cyl. (OM651), 5T (Freightliner 3500, Sprinter 3500 CDI)	2016	GMBXT02.1HD4	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-III SULEV230	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	3	Within 30 Days of approval of the MY2020 4-cyl. Sprinter, but no later than December 21, 2020	2

Model	MY	Test Group	Emission Standard	Control Units Receiving Proposed Software Update	Proposed Hardware Update	Emission Modification Category	Emission Modification Report Submission Date	OBD Cluster
Sprinter 6-cyl. (OM642), 3.88T and 4.53T (Freightliner 2500, Freightliner 3500, Sprinter 2500 CDI, Sprinter 3500 CDI)	2016	GMBXT03.0HD1	HDV1 (Federal HD chassis Class 2b GVW 8501-10000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	1	Prior to signature	1
Sprinter 6-cyl. (OM642), 5T (Freightliner 3500, Sprinter 3500 CDI)	2016	GMBXT03.0HD2	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	1	Prior to signature	1
Sprinter 6-cyl. (OM642), 3.88T (Freightliner 2500 4x4, Sprinter 2500 CDI 4x4)	2016	GMBXT03.0HD3	HDV1 (Federal HD chassis Class 2b GVW 8501-10000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	1	Prior to signature	1
Sprinter 6-cyl. (OM642), 5T (Freightliner 3500 4x4, Sprinter 3500 CDI 4x4)	2016	GMBXT03.0HD4	HDV2 (Federal HD chassis Class 3 GVW 10001-14000) CA LEV-II ULEV	ECU, TCU, DCU, Instrument Cluster	NOx sensors (TT3)	1	Prior to signature	1

Attachment J**Cluster 1**

Group	Component / System	Fault code	Monitoring strategy description
Misfire monitoring	Misfire detection	P0300	Misfire monitoring - multiple cylinder
Misfire monitoring	Misfire detection	P0301	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0302	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0303	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0304	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0305	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0306	Misfire monitoring - cylinder 1 to 6
Fuel system	Fuel rail pressure control	P0087	Fuel rail pressure too low
Fuel system	Fuel rail pressure control	P0087	Fuel rail pressure governor deviation error
Fuel system	Fuel rail pressure control	P0088	Fuel rail pressure too high
Fuel system	Fuel rail pressure control	P0088	Fuel rail pressure governor deviation error
Fuel system	Lambda observer	P0171	Monitoring of lambda observer correction value
Fuel system	Lambda observer	P0172	Monitoring of lambda observer correction value
Fuel system	Zero fuel calibration	P2292	Back stop - monitoring of ZFC rail pressure enable conditions
Boost pressure system	Charge air cooler	P026A	Comparison of charge air cooler efficiency with a threshold
Boost pressure system	Boost pressure control	P0234	Governor control deviation monitoring - overboost
Boost pressure system	Boost pressure control	P0299	Governor control deviation monitoring - underboost
Diesel particulate filter	DPF	P2002	Particulate filter - differential pressure monitoring
Diesel particulate filter	DPF	P226D	Plausibility check - detection of defective DPF using differential pressure sensor

Group	Component / System	Fault code	Monitoring strategy description
Diesel particulate filter	DPF	P2459	DPF regeneration interval monitoring
Diesel particulate filter	DPF	P24A2	DPF regeneration monitoring
Diesel particulate filter	Exhaust gas temperature control	P244C	Governor control deviation monitoring - measured exhaust gas temperature downstream oxidation catalyst too low
Diesel particulate filter	Exhaust gas temperature control	P244D	Governor control deviation monitoring - measured exhaust gas temperature downstream oxidation catalyst too high
EGR system	EGR control	P0401	EGR governor control deviation monitoring (low flow)
EGR system	EGR control	P0402	EGR governor control deviation monitoring (high flow)
EGR system	EGR control	P240F	EGR slow response monitoring
EGR system	EGR cooler	P2457	Comparison of EGR cooler efficiency with a threshold
Exhaust gas sensors	NOx sensor downstream SCR	P220B	Plausibility check - comparison of NOx sensor downstream SCR supply voltage with ECU supply voltage
Exhaust gas sensors	NOx sensor downstream SCR	P229E	Driver stage check / signal range check - open circuit NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229E	Driver stage check / signal range check - short circuit NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	NOx sensor downstream SCR - feedback diagnosis
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - offset value - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - offset value - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - heater temperature

Group	Component / System	Fault code	Monitoring strategy description
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P22FD	Physical range check - NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2200	Driver stage check / signal range check - open circuit NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2200	Driver stage check / signal range check - short circuit NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2201	NOx sensor upstream SCR - feedback diagnosis
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check- NOx sensor upstream SCR - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	Physical range check - NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR - offset value - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR - offset value - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR- heater temperature
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P220A	Plausibility check - comparison of NOx sensor upstream SCR supply voltage with ECU supply voltage
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	Plausibility check - NOx sensor upstream SCR - dynamic check
Exhaust gas sensors	O2 sensor	P24C2	Monitoring of lambda sensor dew point release

Group	Component / System	Fault code	Monitoring strategy description
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - comparison of NOx sensor upstream SCR sensor signal and modeled NOx concentration upstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Stuck in Range check - NOx sensor downstream SCR - delta of NOx concentration
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Driver stage check / signal range check - PeelOff NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx-Sensor downstream SCR - gain check during engine afterrun
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx-Sensor downstream SCR - response time check for sensor acknowledge or sensor diagnosis feedback while the gain check during engine afterrun
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Driver stage check / signal range check - PeelOff NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P22F9	NOx sensor upstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from rich to lean
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	NOx sensor upstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from lean to rich
Exhaust gas sensors	NOx sensor downstream SCR	P22FC	NOx sensor downstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from rich to lean
Exhaust gas sensors	NOx sensor downstream SCR	P22FD	NOx sensor downstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from lean to rich
Oxidation catalyst	Oxidation catalyst	P0420	Oxidation catalyst - exotherm based HC conversion monitoring
SCR catalyst	Exhaust gas temperature control	P249C	Time to closed loop monitor for urea dosing strategy
SCR catalyst	SCR catalyst	P20EE	NOx conversion efficiency monitoring

Group	Component / System	Fault code	Monitoring strategy description
Urea dosing system	Urea dosing adaption	P20F5	Plausibility check - long term urea dosing adaption value - out of range high
Vehicle component protection	Vehicle component protection	P2463	Plausibility check - modeled particulate filter load (based on delta p signal) - out of range high
Exhaust gas sensors	O2 sensor	P2243	Signal range check - nernst voltage pin open circuit
Exhaust gas sensors	O2 sensor	P2237	Plausibility check - lambda sensor O2 concentration
Exhaust gas sensors	O2 sensor	P0130	Signal range check - open circuit
Exhaust gas sensors	O2 sensor	P014C	Plausibility check - response rate during rich to lean transition
Exhaust gas sensors	O2 sensor	P2231	Monitoring for crosstalk between lambda sensor heater control signal and O2 sensor signal
Exhaust gas sensors	O2 sensor	P0032	Driver stage check - short circuit to battery
Exhaust gas sensors	O2 sensor	P0031	Driver stage check - short circuit to ground
Exhaust gas sensors	O2 sensor	P0030	Driver stage check - open circuit
Exhaust gas sensors	O2 sensor	P0132	Signal range check - open circuit
Exhaust gas sensors	O2 sensor	P0131	Signal range check - short circuit to ground
Exhaust gas sensors	O2 sensor	P2195	Plausibility check - measured with calculated lambda signal during overrun
Exhaust gas sensors	O2 sensor	P2195	Plausibility check - measured with calculated lambda signal during part load
Exhaust gas sensors	O2 sensor	P2196	Plausibility check - measured with calculated lambda signal during overrun
Exhaust gas sensors	O2 sensor	P2196	Plausibility check - measured with calculated lambda signal during part load
Exhaust gas sensors	O2 sensor	P0135	Physical signal range check - lambda sensor temperature too high
Exhaust gas sensors	O2 sensor	P0135	Physical signal range check - lambda sensor temperature too low
Exhaust gas sensors	O2 sensor	P0132	Driver stage check - short circuit to battery

Group	Component / System	Fault code	Monitoring strategy description
Exhaust gas sensors	O2 sensor	P0131	Driver stage check - short circuit to ground
Engine position and speed determination	Crankshaft position sensor	P0335	Plausibility check - comparison of crankshaft signal and camshaft signal
Engine position and speed determination	Camshaft position sensor	P0340	Plausibility check - comparison of crankshaft signal and camshaft signal
Air induction system	Variable swirl valve actuator	P2008	Driver stage check - open circuit
Air induction system	Intake air pressure sensor	P012C	Signal range check - short circuit to ground / open circuit
Air induction system	Charge air temperature sensor downstream charge air cooler	P007C	Signal range check - short circuit to ground
Air induction system	Mass air flow sensor (MAF)	P0102	Signal range check - out of range low / open circuit
Pre glow system	Glow plug cylinder 1	P066A	Driver stage check - short circuit to ground glow plug cylinder 1 to 6
Pre glow system	Glow plug cylinder 2	P066C	Driver stage check - short circuit to ground glow plug cylinder 1 to 6
Pre glow system	Glow plug cylinder 3	P066E	Driver stage check - short circuit to ground glow plug cylinder 1 to 6
Pre glow system	Glow plug cylinder 4	P067A	Driver stage check - short circuit to ground glow plug cylinder 1 to 6
Pre glow system	Glow plug cylinder 5	P067C	Driver stage check - short circuit to ground glow plug cylinder 1 to 6
Pre glow system	Glow plug cylinder 6	P067E	Driver stage check - short circuit to ground glow plug cylinder 1 to 6
Pre glow system	Glow system control module	P052F	Signal range check - battery voltage at GPU out of range low
Fuel system	Cylinder 1 injector	P0201	Driver stage check - open circuit
Fuel system	Cylinder 2 injector	P0202	Driver stage check - open circuit
Fuel system	Cylinder 3 injector	P0203	Driver stage check - open circuit
Fuel system	Cylinder 4 injector	P0204	Driver stage check - open circuit
Fuel system	Cylinder 5 injector	P0205	Driver stage check - open circuit
Fuel system	Cylinder 6 injector	P0206	Driver stage check - open circuit
Fuel system	Fuel metering unit	P0251	Driver stage check - open circuit
Fuel system	Fuel rail pressure sensor	P0192	Signal range check - short circuit to ground / open circuit
Fuel system	Fuel temperature sensor	P0183	Signal range check - short circuit to battery / open circuit
EGR system	EGR valve actuator	P0403	Driver stage check - open circuit

Group	Component / System	Fault code	Monitoring strategy description
EGR system	Exhaust gas temperature sensor downstream EGR cooler	P040D	Signal range check - short circuit to battery / open circuit
Exhaust gas sensors	Differential pressure sensor	P2455	Signal range check - short circuit to battery
Exhaust gas sensors	Exhaust gas temperature sensor downstream oxidation catalyst	P242C	Signal range check - short circuit to ground
Exhaust gas sensors	Exhaust gas temperature sensor upstream oxidation catalyst	P2033	Signal range check - short circuit to battery / open circuit
Exhaust gas sensors	Exhaust gas temperature sensor upstream SCR	P2470	Signal range check - short circuit to ground
Exhaust gas sensors	Exhaust gas temperature sensor upstream turbocharger turbine	P0545	Signal range check - short circuit to ground
Urea dosing system	Urea supply pump	P208A	Driver stage check - open circuit
Urea dosing system	Urea dosing valve	P2047	Driver stage check - open circuit
Engine cooling system	Engine coolant thermostat	P0128	Plausibility check - comparison of measured ECT with modeled ECT
Engine cooling system	ECT sensor	P0117	Signal range check - short circuit to ground
Boost pressure system	Boost pressure sensor	P0237	Signal range check - short circuit to ground / open circuit
DCU	Reductant tank temperature sensor	P205C	Signal range check - short circuit to ground
TCU		P0562	System Voltage Low
J1699 dynamic		-	-

Cluster 3

Group	Component / System	Fault code	Monitoring strategy description
Misfire monitoring	Misfire detection	P0300	Misfire monitoring - multiple cylinder
Misfire monitoring	Misfire detection	P0301	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0302	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0303	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0304	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0305	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0306	Misfire monitoring - cylinder 1 to 6
Fuel system	Fuel rail pressure control	P0087	Fuel rail pressure too low
Fuel system	Fuel rail pressure control	P0087	Fuel rail pressure governor deviation error
Fuel system	Fuel rail pressure control	P0087	Governor control deviation monitoring
Fuel system	Fuel rail pressure control	P0088	Fuel rail pressure too high
Fuel system	Fuel rail pressure control	P0088	Fuel rail pressure governor deviation error
Fuel system	Fuel rail pressure control	P00C6	Monitor for fuel rail pressure insufficient for engine start
Fuel system	Lambda observer	P0171	Monitoring of lambda observer correction value
Fuel system	Lambda observer	P0172	Monitoring of lambda observer correction value
Fuel system	Zero fuel calibration	P015E	Back stop - monitoring of ZFC rail pressure enable conditions and Crankshaft adaption completion status
Boost pressure system	Charge air cooler	P026A	Comparison of charge air cooler efficiency with a threshold
Boost pressure system	Boost pressure control	P226C	Boost pressure slow response monitoring
Diesel particulate filter	DPF	P2002	Rationality check - monitoring of the DPF efficiency using particulate sensor
Diesel particulate filter	DPF	P226D	Plausibility check - detection of defective DPF using differential pressure sensor
Diesel particulate	DPF	P2459	DPF regeneration interval monitoring

Group	Component / System	Fault code	Monitoring strategy description
filter			
Diesel particulate filter	DPF	P24A2	DPF regeneration monitoring
Diesel particulate filter	Exhaust gas temperature control	P244C	Governor control deviation monitoring - measured exhaust gas temperature downstream oxidation catalyst too low
Diesel particulate filter	Exhaust gas temperature control	P244D	Governor control deviation monitoring - measured exhaust gas temperature downstream oxidation catalyst too high
EGR system	EGR control	P0401	EGR governor control deviation monitoring (low flow)
EGR system	EGR control	P02EC	EGR governor control deviation monitoring - plausibility check - comparison of measured mass air flow to modeled value
EGR system	EGR control	P0402	Plausibility check - pin pointing - comparison of measured EGR rate ratio between two fuel cut off phases with different demanded EGR valve positions
EGR system	EGR control	P240F	EGR slow response monitoring
EGR system	EGR cooler	P2457	Comparison of EGR cooler efficiency with a threshold
Exhaust gas sensors	NOx sensor downstream SCR	P220B	Plausibility check - comparison of NOx sensor downstream SCR supply voltage with ECU supply voltage
Exhaust gas sensors	NOx sensor downstream SCR	P229E	Driver stage check / signal range check - open circuit NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229E	Driver stage check / signal range check - short circuit NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	NOx sensor downstream SCR - feedback diagnosis
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - offset value - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - offset value - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - heater temperature

Group	Component / System	Fault code	Monitoring strategy description
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P22FD	Physical range check - NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2200	Driver stage check / signal range check - open circuit NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2200	Driver stage check / signal range check - short circuit NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2201	NOx sensor upstream SCR - feedback diagnosis
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check- NOx sensor upstream SCR - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	Physical range check - NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR - offset value - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR - offset value - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR- heater temperature
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P220A	Plausibility check - comparison of NOx sensor upstream SCR supply voltage with ECU supply voltage
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	Plausibility check - NOx sensor upstream SCR - dynamic check
Exhaust gas sensors	NOx sensor upstream SCR	P24C2	Monitoring of NOx sensor upstream SCR dew point release
Exhaust gas sensors	PM sensor	P24AE	Signal range check of PM sensor IDE current - out of range high
Exhaust gas sensors	PM sensor	P24AF	Plausibility check - Comparison of PM sensor control unit supply voltage to ECU supply voltage
Exhaust gas sensors	PM sensor	P24AF	Plausibility check - PM sensor control unit to ECU
Exhaust gas sensors	PM sensor	P24AF	Comparison of IDE-current at high temperature (during sensor regeneration)

Group	Component / System	Fault code	Monitoring strategy description
			with threshold Note: This monitor detects open circuit failures on DIE-pos and IDE-neg and short circuit to ground on IDE-neg
Exhaust gas sensors	PM sensor	P24AF	Signal range check of PM sensor IDE-neg connection - short circuit to battery
Exhaust gas sensors	PM sensor	P24AF	Signal range check of PM sensor IDE-neg connection - short circuit to battery
Exhaust gas sensors	PM sensor	P24AF	Signal range check IDE-pos voltage - out of range low / out of range high
Exhaust gas sensors	PM sensor	P24B4	PM sensor heater monitoring - circuit performance
Exhaust gas sensors	PM sensor	P24B5	PM sensor heater monitoring - short circuit to ground / open circuit
Exhaust gas sensors	PM sensor	P24B6	PM sensor heater monitoring - short circuit to battery
Exhaust gas sensors	PM sensor	P24B7	Rationality check of PM sensor heater resistance Note: This monitor runs once per driving cycle after ignition on
Exhaust gas sensors	PM sensor	P24C6	Signal range check PM sensor temperature sensor - out of range high / out of range low
Exhaust gas sensors	PM sensor	P24C7	Plausibility check - comparison of measured PM sensor temperature to average of exhaust gas temperature sensor values
Exhaust gas sensors	PM sensor	P24C7	Plausibility check - comparison of measured PM sensor temperature to average of exhaust temperature sensor values
Exhaust gas sensors	PM sensor	P24DA	Monitoring of PM sensor protection tube - detection of changes in heater voltage required to maintain constant sensor temperature
Exhaust gas sensors	PM sensor	U02A3	CAN communication monitoring - PM sensor control unit
Exhaust gas sensors	PM sensor	U04A4	Plausibility check of PM sensor sensitivity calibration factor - detection of wrong or manipulated signal
Boost pressure system	Boost pressure control	P0234	Governor control deviation monitoring at part load - overboost
Boost pressure system	Boost pressure control	P0299	Governor control deviation monitoring at part load - underboost
Exhaust gas	NOx sensor	P2201	Plausibility check - comparison of NOx

Group	Component / System	Fault code	Monitoring strategy description
sensors	upstream SCR		sensor upstream SCR sensor signal and modeled NOx concentration upstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Stuck in Range check - NOx sensor downstream SCR - delta of NOx concentration
Exhaust gas sensors	NOx sensor downstream SCR	P22FD	NOx sensor downstream SCR deadcycle detection - comparison of measured lambda from NOx sensor to modeled lambda for signal delay from lean to rich
Exhaust gas sensors	NOx sensor downstream SCR	P22FC	NOx sensor downstream SCR deadcycle detection - comparison of measured lambda from NOx sensor to modeled lambda for signal delay from rich to lean
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	NOx sensor upstream SCR deadcycle detection - comparison of measured lambda from NOx sensor to modeled lambda for signal delay from lean to rich
Exhaust gas sensors	NOx sensor upstream SCR	P22F9	NOx sensor upstream SCR deadcycle detection - comparison of measured lambda from NOx sensor to modeled lambda for signal delay from rich to lean
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Driver stage check / plausibility check - peel off NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx-Sensor downstream SCR - gain check during engine afterrun
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - response time check for sensor acknowledge or sensor diagnosis feedback of gain check during engine afterrun
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Driver stage check / signal range check - PeelOff NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P22F9	Removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from rich to lean
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	Removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from lean to rich
Exhaust gas sensors	NOx sensor downstream SCR	P22FC	Removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from

Group	Component / System	Fault code	Monitoring strategy description
			rich to lean
Exhaust gas sensors	NOx sensor downstream SCR	P22FD	Removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from lean to rich
Oxidation catalyst	Oxidation catalyst	P0420	Oxidation catalyst - exotherm based HC conversion monitoring
SCR catalyst	Exhaust gas temperature control	P249C	Time to closed loop monitor for urea dosing strategy
SCR catalyst	Exhaust gas temperature control	P249C	Time to closed loop monitor for urea dosing strategy
SCR catalyst	SCR catalyst	P20EE	NOx conversion efficiency monitoring
Urea dosing system	Urea dosing adaption	P20F5	Plausibility check - long term urea dosing adaption value - out of range high
Vehicle component protection	Vehicle component protection	P2463	Plausibility check - modeled particulate filter load (based on delta p signal) - out of range high
Exhaust gas sensors	PM sensor	P24D1	Monitoring of PM sensor regeneration – detection of incomplete PM sensor regeneration
Exhaust gas sensors	O2 sensor	P2243	Signal range check - nernst voltage pin open circuit
Exhaust gas sensors	O2 sensor	P2237	Plausibility check - lambda sensor O2 concentration
Exhaust gas sensors	O2 sensor	P0130	Signal range check - open circuit
Exhaust gas sensors	O2 sensor	P014C	Plausibility check - response rate during rich to lean transition
Exhaust gas sensors	O2 sensor	P2231	Monitoring for crosstalk between lambda sensor heater control signal and O2 sensor signal
Exhaust gas sensors	O2 sensor	P0032	Driver stage check - short circuit to battery
Exhaust gas sensors	O2 sensor	P0031	Driver stage check - short circuit to ground
Exhaust gas sensors	O2 sensor	P0030	Driver stage check - open circuit
Exhaust gas sensors	O2 sensor	P0132	Signal range check - out of range high
Exhaust gas sensors	O2 sensor	P0131	Signal range check - out of range low
Exhaust gas sensors	O2 sensor	P2195	Plausibility check - measured with calculated lambda signal during overrun
Exhaust gas	O2 sensor	P2195	Plausibility check - measured with

Group	Component / System	Fault code	Monitoring strategy description
sensors			calculated lambda signal during part load
Exhaust gas sensors	O2 sensor	P2196	Plausibility check - measured with calculated lambda signal during overrun
Exhaust gas sensors	O2 sensor	P2196	Plausibility check - measured with calculated lambda signal during part load
Exhaust gas sensors	O2 sensor	P0135	Physical signal range check - lambda sensor temperature too high
Exhaust gas sensors	O2 sensor	P0135	Physical signal range check - lambda sensor temperature too low
Exhaust gas sensors	O2 sensor	P0132	Driver stage check - short circuit to battery
Exhaust gas sensors	O2 sensor	P0131	Driver stage check - short circuit to ground
Engine position and speed determination	Crankshaft position sensor	P0335	Plausibility check - comparison of crankshaft signal and camshaft signal
Engine position and speed determination	Camshaft position sensor	P0340	Plausibility check - comparison of crankshaft signal and camshaft signal
Air induction system	Variable swirl valve actuator	P2008	Driver stage check - open circuit
Air induction system	Intake air pressure sensor	P012C	Signal range check - short circuit to ground / open circuit
Air induction system	Charge air temperature sensor downstream charge air cooler	P007C	Signal range check - short circuit to ground
Air induction system	Mass air flow sensor (MAF)	P0102	Signal range check - out of range low / open circuit
Pre glow system	Glow plug cylinder 1	P066A	Driver stage check - short circuit to ground glow plug cylinder 1 to 4 6
Pre glow system	Glow plug cylinder 2	P066C	Driver stage check - short circuit to ground glow plug cylinder 1 to 4 6
Pre glow system	Glow plug cylinder 3	P066E	Driver stage check - short circuit to ground glow plug cylinder 1 to 4 6
Pre glow system	Glow plug cylinder 4	P067A	Driver stage check - short circuit to ground glow plug cylinder 1 to 4 6
Pre glow system	Glow plug cylinder 5	P067C	Driver stage check - short circuit to ground glow plug cylinder 1 to 6
Pre glow system	Glow plug cylinder 6	P067E	Driver stage check - short circuit to ground glow plug cylinder 1 to 6
Pre glow system	Glow system control module	P052F	Signal range check - battery voltage at GPU out of range low
Fuel system	Cylinder 1 injector	P0201	Driver stage check - open circuit

Group	Component / System	Fault code	Monitoring strategy description
Fuel system	Cylinder 2 injector	P0202	Driver stage check - open circuit
Fuel system	Cylinder 3 injector	P0203	Driver stage check - open circuit
Fuel system	Cylinder 4 injector	P0204	Driver stage check - open circuit
Fuel system	Cylinder 5 injector	P0205	Driver stage check - open circuit
Fuel system	Cylinder 6 injector	P0206	Driver stage check - open circuit
Fuel system	Fuel metering unit	P0251	Driver stage check - open circuit
Fuel system	Fuel rail pressure sensor	P0192	Signal range check - short circuit to ground
Fuel system	Fuel temperature sensor	P0183	Signal range check - short circuit to battery / open circuit
EGR system	EGR valve actuator	P0403	Driver stage check - open circuit
EGR system	Exhaust gas temperature sensor downstream EGR cooler	P040D	Signal range check - short circuit to battery / open circuit
Exhaust gas sensors	Differential pressure sensor	P2455	Signal range check - short circuit to battery
Exhaust gas sensors	Exhaust gas temperature sensor downstream oxidation catalyst	P242C	Signal range check - short circuit to ground
Exhaust gas sensors	Exhaust gas temperature sensor upstream oxidation catalyst	P2033	Signal range check - short circuit to battery / open circuit
Exhaust gas sensors	Exhaust gas temperature sensor upstream SCR	P2470	Signal range check - short circuit to ground
Exhaust gas sensors	Exhaust gas temperature sensor upstream turbocharger turbine	P0545	Signal range check - short circuit to ground
Urea dosing system	Urea supply pump	P208A	Driver stage check - open circuit
Urea dosing system	Urea dosing valve	P2047	Driver stage check - open circuit
Engine cooling system	Engine coolant thermostat	P0128	Plausibility check - comparison of measured ECT with modeled ECT
Engine cooling system	ECT sensor	P0117	Signal range check - short circuit to ground
Boost pressure system	Boost pressure sensor	P0237	Signal range check - short circuit to ground / open circuit
Exhaust gas	Exhaust gas	P0472	Signal range check - short circuit to

Group	Component / System	Fault code	Monitoring strategy description
sensors	pressure sensor upstream turbocharger turbine		ground / open circuit
Air induction system	Throttle valve actuator	P2100	Driver stage check - open circuit
Fuel system	Fuel rail pressure control valve	P0090	Driver stage check - open circuit
Air induction system	Charge air temperature sensor downstream charge air cooler	P007C	Signal range check - short circuit to ground
Vehicle speed	Vehicle speed	C0031	Signal range check / plausibility check - wheel speed sensor signals
Vehicle speed	Vehicle speed	C0034	Signal range check / plausibility check - wheel speed sensor signals
Vehicle speed	Vehicle speed	C0037	Signal range check / plausibility check - wheel speed sensor signals
Vehicle speed	Vehicle speed	C003A	Signal range check / plausibility check - wheel speed sensor signals
DCU	Reductant tank temperature sensor	P205C	Signal range check - short circuit to ground
TCU	System Voltage	P0562	range check - low
J1699 dynamic		-	-

Cluster 4

Group	Component / System	Fault code	Monitoring strategy description
Misfire monitoring	Misfire detection	P0300	Misfire monitoring - multiple cylinder
Misfire monitoring	Misfire detection	P0301	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0302	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0303	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0304	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0305	Misfire monitoring - cylinder 1 to 6
Misfire monitoring	Misfire detection	P0306	Misfire monitoring - cylinder 1 to 6
Fuel system	Fuel rail pressure control	P0087	Fuel rail pressure too low
Fuel system	Fuel rail pressure control	P0087	Fuel rail pressure governor deviation error
Fuel system	Fuel rail pressure control	P0087	Governor control deviation monitoring
Fuel system	Fuel rail pressure control	P0087	Governor control deviation monitoring
Fuel system	Fuel rail pressure control	P0088	Fuel rail pressure too high
Fuel system	Fuel rail pressure control	P0088	Fuel rail pressure - metering unit stuck
Fuel system	Fuel rail pressure control	P0088	Fuel rail pressure governor deviation error
Fuel system	Fuel rail pressure control	P00C6	Monitor for fuel rail pressure insufficient for engine start
Fuel system	Fuel rail pressure control	P053F	Fuel rail pressure governor deviation error during CSERS
Fuel system	Fuel rail pressure control	P05XX	Fuel rail pressure governor deviation error during CSERS
Fuel system	Lambda observer	P0171	Monitoring of lambda observer correction value
Fuel system	Lambda observer	P0172	Monitoring of lambda observer correction value
Fuel system	Zero fuel calibration	P2292	Back stop - monitoring of ZFC rail pressure enable conditions
Boost pressure system	Charge air cooler	P026A	Comparison of charge air cooler efficiency with a threshold

Group	Component / System	Fault code	Monitoring strategy description
Boost pressure system	Boost pressure control	P226C	Boost pressure slow response monitoring
Diesel particulate filter	DPF	P2002	Rationality check - monitoring of the DPF efficiency using particulate sensor
Diesel particulate filter	DPF	P226D	Plausibility check - detection of defective DPF using differential pressure sensor
Diesel particulate filter	DPF	P2459	DPF regeneration interval monitoring
Diesel particulate filter	DPF	P24A2	DPF regeneration monitoring
Diesel particulate filter	Exhaust gas temperature control	P244C	Governor control deviation monitoring - measured exhaust gas temperature downstream oxidation catalyst too low
Diesel particulate filter	Exhaust gas temperature control	P244D	Governor control deviation monitoring - measured exhaust gas temperature downstream oxidation catalyst too high
EGR system	EGR control	P0401	EGR governor control deviation monitoring (low flow)
EGR system	EGR control	P02EC	EGR governor control deviation monitoring (high flow)
EGR system	EGR control	P04DD	EGR governor control deviation during cold start (low flow)
EGR system	EGR control	P02EC	EGR governor control deviation during cold start (high flow)
EGR system	EGR control	P240F	EGR slow response monitoring
EGR system	EGR cooler	P2457	Comparison of EGR cooler efficiency with a threshold
Exhaust gas sensors	NOx sensor downstream SCR	P220B	Plausibility check - comparison of NOx sensor downstream SCR supply voltage with ECU supply voltage
Exhaust gas sensors	NOx sensor downstream SCR	P229E	Driver stage check / signal range check - open circuit NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229E	Driver stage check / signal range check - short circuit NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	NOx sensor downstream SCR - feedback diagnosis
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - offset value - out of range high

Group	Component / System	Fault code	Monitoring strategy description
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - offset value - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - heater temperature
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P22FD	Physical range check - NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2200	Driver stage check / signal range check - open circuit NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2200	Driver stage check / signal range check - short circuit NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2201	NOx sensor upstream SCR - feedback diagnosis
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check- NOx sensor upstream SCR - out of range low
Exhaust gas sensors	NOx sensor upstream SCR		
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	Physical range check - NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR - offset value - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR - offset value - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR- heater temperature
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P220A	Plausibility check - comparison of NOx sensor upstream SCR supply voltage with ECU supply voltage
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	Plausibility check - NOx sensor upstream SCR - dynamic check
Exhaust gas sensors	O2 sensor	P24C2	Monitoring of lambda sensor dew point release
Exhaust gas sensors	PM sensor	P24AE	Signal range check of PM sensor IDE current - out of range high

Group	Component / System	Fault code	Monitoring strategy description
Exhaust gas sensors	PM sensor	P24AF	Plausibility check - Comparison of PM sensor control unit supply voltage to ECU supply voltage
Exhaust gas sensors	PM sensor	P24AF	Plausibility check - PM sensor control unit to ECU
Exhaust gas sensors	PM sensor	P24AF	Comparison of IDE-current at high temperature (during sensor regeneration) with threshold Note: This monitor detects open circuit failures on DIE-pos and IDE-neg and short circuit to ground on IDE-neg
Exhaust gas sensors	PM sensor	P24AF	Signal range check of PM sensor IDE-neg connection - short circuit to battery
Exhaust gas sensors	PM sensor	P24AF	Signal range check of PM sensor IDE-neg connection - short circuit to battery
Exhaust gas sensors	PM sensor	P24AF	Signal range check IDE-pos voltage - out of range low / out of range high
Exhaust gas sensors	PM sensor	P24B5	PM sensor heater monitoring - short circuit to ground / open circuit
Exhaust gas sensors	PM sensor	P24B6	PM sensor heater monitoring - short circuit to battery
Exhaust gas sensors	PM sensor	P24B7	Rationality check of PM sensor heater resistance Note: This monitor runs once per driving cycle after ignition on
Exhaust gas sensors	PM sensor	P24C6	Signal range check PM sensor temperature sensor - out of range high / out of range low
Exhaust gas sensors	PM sensor	P24C7	Plausibility check - comparison of measured PM sensor temperature to average of exhaust gas temperature sensor values
Exhaust gas sensors	PM sensor	P24C7	Plausibility check - comparison of measured PM sensor temperature to average of exhaust temperature sensor values
Exhaust gas sensors	PM sensor	P24DA	Monitoring of PM sensor protection tube - detection of changes in heater voltage required to maintain constant sensor temperature
Exhaust gas sensors	PM sensor	U02A3	CAN communication monitoring - PM sensor control unit
Exhaust gas sensors	PM sensor	U04A4	Plausibility check of PM sensor sensitivity calibration factor - detection of wrong or manipulated signal

Group	Component / System	Fault code	Monitoring strategy description
Boost pressure system	Boost pressure control	P0234	Negative governor deviation monitoring at part load
Boost pressure system	Boost pressure control	P0299	Positive governor deviation monitoring at part load
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - comparison of NOx sensor upstream SCR sensor signal and modeled NOx concentration upstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Stuck in Range check - NOx sensor downstream SCR - delta of NOx concentration
Boost pressure system	Boost pressure control	P0234	Negative governor deviation monitoring at part load during rapid heat up mode
Boost pressure system	Boost pressure control	P0299	Positive governor deviation monitoring at part load during rapid heat up mode
Boost pressure system	Boost pressure control	P0234	Governor control deviation monitoring - overboost
Boost pressure system	Boost pressure control	P0299	Governor control deviation monitoring - underboost
Fuel system	Fuel rail pressure control	P053F	Fuel rail pressure governor deviation error during CSERS
Exhaust gas sensors	NOx sensor downstream SCR		
Exhaust gas sensors	NOx sensor downstream SCR		
Exhaust gas sensors	NOx sensor upstream SCR		
Exhaust gas sensors	NOx sensor upstream SCR		
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Driver stage check / signal range check - PeelOff NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx-Sensor downstream SCR - gain check during engine afterrun
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx-Sensor downstream SCR - response time check for sensor acknowledge or sensor diagnosis feedback while the gain check during engine afterrun
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Driver stage check / signal range check - PeelOff NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P22F9	NOx sensor upstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled

Group	Component / System	Fault code	Monitoring strategy description
			lambda for signal transition from rich to lean
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	NOx sensor upstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from lean to rich
Exhaust gas sensors	NOx sensor downstream SCR	P22FC	NOx sensor downstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from rich to lean
Exhaust gas sensors	NOx sensor downstream SCR	P22FD	NOx sensor downstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from lean to rich
Oxidation catalyst	Oxidation catalyst	P0420	Oxidation catalyst - exotherm based HC conversion monitoring
SCR catalyst	Exhaust gas temperature control	P249C	Time to closed loop monitor for urea dosing strategy
SCR catalyst	SCR catalyst	P20EE	NOx conversion efficiency monitoring
Urea dosing system	Urea dosing adaption	P20F5	Plausibility check - long term urea dosing adaption value - out of range high
Vehicle component protection	Vehicle component protection	P2463	Plausibility check - modeled particulate filter load (based on delta p signal) - out of range high
Exhaust gas sensors	PM sensor	P24D1	Monitoring of PM sensor regeneration - detection of incomplete PM sensor regeneration
Exhaust gas sensors	O2 sensor	P2243	Signal range check - nernst voltage pin open circuit
Exhaust gas sensors	O2 sensor	P2237	Plausibility check - lambda sensor O2 concentration
Exhaust gas sensors	O2 sensor	P0130	Signal range check - open circuit
Exhaust gas sensors	O2 sensor	P014C	Plausibility check - response rate during rich to lean transition
Exhaust gas sensors	O2 sensor	P2231	Monitoring for crosstalk between lambda sensor heater control signal and O2 sensor signal
Exhaust gas sensors	O2 sensor	P0032	Driver stage check - short circuit to battery

Group	Component / System	Fault code	Monitoring strategy description
Exhaust gas sensors	O2 sensor	P0031	Driver stage check - short circuit to ground
Exhaust gas sensors	O2 sensor	P0030	Driver stage check - open circuit
Exhaust gas sensors	O2 sensor	P0132	Signal range check - open circuit
Exhaust gas sensors	O2 sensor	P0131	Signal range check - short circuit to ground
Exhaust gas sensors	O2 sensor	P2195	Plausibility check - measured with calculated lambda signal during overrun
Exhaust gas sensors	O2 sensor	P2195	Plausibility check - measured with calculated lambda signal during part load
Exhaust gas sensors	O2 sensor	P2196	Plausibility check - measured with calculated lambda signal during overrun
Exhaust gas sensors	O2 sensor	P2196	Plausibility check - measured with calculated lambda signal during part load
Exhaust gas sensors	O2 sensor	P0135	Physical signal range check - lambda sensor temperature too high
Exhaust gas sensors	O2 sensor	P0135	Physical signal range check - lambda sensor temperature too low
Exhaust gas sensors	O2 sensor	P0132	Driver stage check - short circuit to battery
Exhaust gas sensors	O2 sensor	P0131	Driver stage check - short circuit to ground
Engine position and speed determination	Crankshaft position sensor	P0335	Plausibility check - comparison of crankshaft signal and camshaft signal
Engine position and speed determination	Camshaft position sensor	P0340	Plausibility check - comparison of crankshaft signal and camshaft signal
Air induction system	Variable swirl valve actuator	P2008	Driver stage check - open circuit
Air induction system	Intake air pressure sensor	P012C	Signal range check - short circuit to ground / open circuit
Air induction system	Charge air temperature sensor downstream charge air cooler	P007C	Signal range check - short circuit to ground
Air induction system	Charge air temperature sensor upstream charge air cooler	P0097	Signal range check - short circuit to ground
Air induction system	Mass air flow sensor (MAF)	P0102	Signal range check - out of range low / open circuit

Group	Component / System	Fault code	Monitoring strategy description
Pre glow system	Glow plug cylinder 1	P066A	Driver stage check - short circuit to ground glow plug cylinder 1 to 4
Pre glow system	Glow plug cylinder 2	P066C	Driver stage check - short circuit to ground glow plug cylinder 1 to 4
Pre glow system	Glow plug cylinder 3	P066E	Driver stage check - short circuit to ground glow plug cylinder 1 to 4
Pre glow system	Glow plug cylinder 4	P067A	Driver stage check - short circuit to ground glow plug cylinder 1 to 4
Pre glow system	Glow system control module	P052F	Signal range check - battery voltage at GPU out of range low
Fuel system	Cylinder 1 injector	P0201	Driver stage check - open circuit
Fuel system	Cylinder 2 injector	P0202	Driver stage check - open circuit
Fuel system	Cylinder 3 injector	P0203	Driver stage check - open circuit
Fuel system	Cylinder 4 injector	P0204	Driver stage check - open circuit
Fuel system	Fuel metering unit	P0251	Driver stage check - open circuit
Fuel system	Fuel rail pressure sensor	P0192	Signal range check - short circuit to ground / open circuit
Fuel system	Fuel temperature sensor	P0183	Signal range check - short circuit to battery / open circuit
EGR system	EGR valve actuator	P0403	Driver stage check - open circuit
EGR system	Exhaust gas temperature sensor downstream EGR cooler	P040D	Signal range check - short circuit to battery / open circuit
Exhaust gas sensors	Differential pressure sensor	P2455	Signal range check - short circuit to battery
Exhaust gas sensors	Exhaust gas temperature sensor downstream oxidation catalyst	P242C	Signal range check - short circuit to ground
Exhaust gas sensors	Exhaust gas temperature sensor upstream oxidation catalyst	P2033	Signal range check - short circuit to battery / open circuit
Exhaust gas sensors	Exhaust gas temperature sensor upstream SCR	P2470	Signal range check - short circuit to ground
Exhaust gas sensors	Exhaust gas temperature sensor upstream turbocharger turbine	P0545	Signal range check - short circuit to ground
Urea dosing system	Urea supply pump	P208A	Driver stage check - open circuit

Group	Component / System	Fault code	Monitoring strategy description
Urea dosing system	Urea dosing valve	P2047	Driver stage check - open circuit
Engine cooling system	Engine coolant thermostat	P0128	Plausibility check - comparison of measured ECT with modeled ECT
Engine cooling system	ECT sensor	P0117	Signal range check - short circuit to ground
Boost pressure system	Boost pressure sensor	P0237	Signal range check - short circuit to ground / open circuit
DCU	Reductant tank temperature sensor	P205C	Signal range check - short circuit to ground
TCU		P0562	System Voltage Low
J1699 dynamic		-	-

Cluster 5

Group	Component / System	Fault code	Monitoring strategy description
Misfire monitoring	Misfire detection	P0300	Misfire monitoring - multiple cylinder
Misfire monitoring	Misfire detection	P0301	Misfire monitoring - cylinder 1 to 4
Misfire monitoring	Misfire detection	P0302	Misfire monitoring - cylinder 1 to 4
Misfire monitoring	Misfire detection	P0303	Misfire monitoring - cylinder 1 to 4
Misfire monitoring	Misfire detection	P0304	Misfire monitoring - cylinder 1 to 4
Fuel system	Fuel rail pressure control	P0087	Fuel rail pressure too low
Fuel system	Fuel rail pressure control	P0087	Fuel rail pressure governor deviation error
Fuel system	Fuel rail pressure control	P0087	Governor control deviation monitoring
Fuel system	Fuel rail pressure control	P0087	Governor control deviation monitoring
Fuel system	Fuel rail pressure control	P0088	Fuel rail pressure too high
Fuel system	Fuel rail pressure control	P0088	Fuel rail pressure - metering unit stuck
Fuel system	Fuel rail pressure control	P0088	Fuel rail pressure governor deviation error
Fuel system	Fuel rail pressure control	P00C6	Monitor for fuel rail pressure insufficient for engine start
Fuel system	Fuel rail pressure control	P053F	Fuel rail pressure governor deviation error during CSERS
Fuel system	Lambda observer	P0171	Monitoring of lambda observer correction value
Fuel system	Lambda observer	P0172	Monitoring of lambda observer correction value
Fuel system	Zero fuel calibration	P2292	Back stop - monitoring of ZFC rail pressure enable conditions
EGR system	Charge air cooler	P026A	Comparison of charge air cooler efficiency with a threshold
Boost pressure system	Boost pressure control	P226C	Boost pressure slow response monitoring
Diesel particulate filter	DPF	P2002	Rationality check - monitoring of the DPF efficiency using particulate sensor
Diesel particulate filter	DPF	P226D	Plausibility check - detection of defective DPF using differential pressure sensor

Group	Component / System	Fault code	Monitoring strategy description
Diesel particulate filter	DPF	P2459	DPF regeneration interval monitoring
Diesel particulate filter	DPF	P24A2	DPF regeneration monitoring
Diesel particulate filter	Exhaust gas temperature control	P244C	Governor control deviation monitoring - measured exhaust gas temperature downstream oxidation catalyst too low
Diesel particulate filter	Exhaust gas temperature control	P244D	Governor control deviation monitoring - measured exhaust gas temperature downstream oxidation catalyst too high
EGR system	EGR control	P02EC	EGR governor control deviation monitoring (low flow)
EGR system	EGR control	P0402	EGR governor control deviation monitoring (high flow)
EGR system	EGR control	P02EC	EGR governor control deviation during cold start (low flow)
EGR system	EGR control	P04DE	EGR governor control deviation during cold start (high flow)
EGR system	EGR control	P240F	EGR slow response monitoring
EGR system	EGR cooler	P2457	Comparison of EGR cooler efficiency with a threshold
Exhaust gas sensors	NOx sensor downstream SCR	P220B	Plausibility check - comparison of NOx sensor downstream SCR supply voltage with ECU supply voltage
Exhaust gas sensors	NOx sensor downstream SCR	P229E	Driver stage check / signal range check - open circuit NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229E	Driver stage check / signal range check - short circuit NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	NOx sensor downstream SCR - feedback diagnosis
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - offset value - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - offset value - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx sensor downstream SCR - heater temperature

Group	Component / System	Fault code	Monitoring strategy description
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range high
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Physical signal range check - NOx sensor downstream SCR - out of range low
Exhaust gas sensors	NOx sensor downstream SCR	P22FD	Physical range check - NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2200	Driver stage check / signal range check - open circuit NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2200	Driver stage check / signal range check - short circuit NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P2201	NOx sensor upstream SCR - feedback diagnosis
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check- NOx sensor upstream SCR - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR - offset value - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR - offset value - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - NOx sensor upstream SCR- heater temperature
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range high
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Physical signal range check - NOx sensor upstream SCR - out of range low
Exhaust gas sensors	NOx sensor upstream SCR	P220A	Plausibility check - comparison of NOx sensor upstream SCR supply voltage with ECU supply voltage
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	Plausibility check - NOx sensor upstream SCR - dynamic check
Exhaust gas sensors	NOx sensor	P24C2	Monitoring of lambda sensor dew point release
Exhaust gas sensors	PM sensor	P24AE	Signal range check of PM sensor IDE current - out of range high
Exhaust gas sensors	PM sensor	P24AF	Plausibility check - Comparison of PM sensor control unit supply voltage to ECU supply voltage
Exhaust gas sensors	PM sensor	P24AF	Plausibility check - PM sensor control unit to ECU
Exhaust gas sensors	PM sensor	P24AF	Comparison of IDE-current at high temperature (during sensor regeneration) with threshold Note: This monitor detects open circuit failures on DIE-pos and IDE-

Group	Component / System	Fault code	Monitoring strategy description
			neg and short circuit to ground on IDE-neg
Exhaust gas sensors	PM sensor	P24AF	Signal range check of PM sensor IDE-neg connection - short circuit to battery
Exhaust gas sensors	PM sensor	P24AF	Signal range check of PM sensor IDE-neg connection - short circuit to battery
Exhaust gas sensors	PM sensor	P24AF	Signal range check IDE-pos voltage - out of range low / out of range high
Exhaust gas sensors	PM sensor	P24B5	PM sensor heater monitoring - short circuit to ground / open circuit
Exhaust gas sensors	PM sensor	P24B6	PM sensor heater monitoring - short circuit to battery
Exhaust gas sensors	PM sensor	P24B7	Rationality check of PM sensor heater resistance Note: This monitor runs once per driving cycle after ignition on
Exhaust gas sensors	PM sensor	P24C6	Signal range check PM sensor temperature sensor - out of range high / out of range low
Exhaust gas sensors	PM sensor	P24C7	Plausibility check - comparison of measured PM sensor temperature to average of exhaust gas temperature sensor values
Exhaust gas sensors	PM sensor	P24C7	Plausibility check - comparison of measured PM sensor temperature to average of exhaust temperature sensor values
Exhaust gas sensors	PM sensor	P24DA	Monitoring of PM sensor protection tube - detection of changes in heater voltage required to maintain constant sensor temperature
Exhaust gas sensors	PM sensor	U02A3	CAN communication monitoring - PM sensor control unit
Exhaust gas sensors	PM sensor	U04A4	Plausibility check of PM sensor sensitivity calibration factor - detection of wrong or manipulated signal
Boost pressure system	Boost pressure control	P0234	Negative governor deviation monitoring at part load
Boost pressure system	Boost pressure control	P0299	Positive governor deviation monitoring at part load
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Plausibility check - comparison of NOx sensor upstream SCR sensor signal and modeled NOx concentration upstream SCR

Group	Component / System	Fault code	Monitoring strategy description
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Stuck in Range check - NOx sensor downstream SCR - delta of NOx concentration
Boost pressure system	Boost pressure control	P0234	Negative governor deviation monitoring at part load during rapid heat up mode
Boost pressure system	Boost pressure control	P0299	Positive governor deviation monitoring at part load during rapid heat up mode
Fuel system	Fuel rail pressure control	P053F	Fuel rail pressure governor deviation error during CSERS
Exhaust gas sensors	NOx sensor upstream SCR	P225C	Plausibility check - comparison of measured signal with calculated O2 concentration value during partial load
Exhaust gas sensors	NOx sensor upstream SCR	P225C	Plausibility check - comparison of measured signal with calculated O2 concentration value during fuel cut
Exhaust gas sensors	NOx sensor upstream SCR	P225D	Plausibility check - comparison of measured signal with calculated O2 concentration value during partial load
Exhaust gas sensors	NOx sensor upstream SCR	P225D	Plausibility check - comparison of measured signal with calculated O2 concentration value during fuel cut
Exhaust gas sensors	NOx sensor upstream SCR	P2201	Driver stage check / signal range check - PeelOff NOx sensor upstream SCR
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx-Sensor downstream SCR - gain check during engine afterrun
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Plausibility check - NOx-Sensor downstream SCR - response time check for sensor acknowledge or sensor diagnosis feedback while the gain check during engine afterrun
Exhaust gas sensors	NOx sensor downstream SCR	P229F	Driver stage check / signal range check - PeelOff NOx sensor downstream SCR
Exhaust gas sensors	NOx sensor upstream SCR	P22F9	NOx sensor upstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from rich to lean
Exhaust gas sensors	NOx sensor upstream SCR	P22FA	NOx sensor upstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from lean to rich

Group	Component / System	Fault code	Monitoring strategy description
Exhaust gas sensors	NOx sensor downstream SCR	P22FC	NOx sensor downstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from rich to lean
Exhaust gas sensors	NOx sensor downstream SCR	P22FD	NOx sensor downstream SCR removal detection - comparison of measured lambda from NOx sensor to modeled lambda for signal transition from lean to rich
Oxidation catalyst	Oxidation catalyst	P0420	Oxidation catalyst - exotherm based HC conversion monitoring
SCR catalyst	Exhaust gas temperature control	P249C	Time to closed loop monitor for urea dosing strategy
SCR catalyst	SCR catalyst	P20EE	NOx conversion efficiency monitoring
Urea dosing system	Urea dosing adaption	P20F5	Plausibility check - long term urea dosing adaption value - out of range high
Vehicle component protection	Vehicle component protection	P2463	Plausibility check - modeled particulate filter load (based on delta p signal) - out of range high
Exhaust gas sensors	PM sensor	P24D1	Monitoring of PM sensor regeneration – detection of incomplete PM sensor regeneration
Engine position and speed determination	Crankshaft position sensor	P0335	Plausibility check - comparison of crankshaft signal and camshaft signal
Engine position and speed determination	Camshaft position sensor	P0340	Plausibility check - comparison of crankshaft signal and camshaft signal
Air induction system	Variable swirl valve actuator	P2008	Driver stage check - open circuit
Air induction system	Intake air pressure sensor	P012C	Signal range check - short circuit to ground / open circuit
Air induction system	Charge air temperature sensor downstream charge air cooler	P007C	Signal range check - short circuit to ground
Air induction system	Charge air temperature sensor upstream charge air cooler	P0097	Signal range check - short circuit to ground
Air induction system	Mass air flow sensor (MAF)	P0102	Signal range check - out of range low / open circuit

Group	Component / System	Fault code	Monitoring strategy description
Pre glow system	Glow plug cylinder 1	P066A	Driver stage check - short circuit to ground glow plug cylinder 1 to 4
Pre glow system	Glow plug cylinder 2	P066C	Driver stage check - short circuit to ground glow plug cylinder 1 to 4
Pre glow system	Glow plug cylinder 3	P066E	Driver stage check - short circuit to ground glow plug cylinder 1 to 4
Pre glow system	Glow plug cylinder 4	P067A	Driver stage check - short circuit to ground glow plug cylinder 1 to 4
Pre glow system	Glow system control module	P052F	Signal range check - battery voltage at GPU out of range low
Fuel system	Cylinder 1 injector	P0201	Driver stage check - open circuit
Fuel system	Cylinder 2 injector	P0202	Driver stage check - open circuit
Fuel system	Cylinder 3 injector	P0203	Driver stage check - open circuit
Fuel system	Cylinder 4 injector	P0204	Driver stage check - open circuit
Fuel system	Fuel metering unit	P0251	Driver stage check - open circuit
Fuel system	Fuel rail pressure sensor	P0192	Signal range check - short circuit to ground / open circuit
Fuel system	Fuel temperature sensor	P0183	Signal range check - short circuit to battery / open circuit
EGR system	EGR valve actuator	P0403	Driver stage check - open circuit
EGR system	Exhaust gas temperature sensor downstream EGR cooler	P040D	Signal range check - short circuit to battery / open circuit
Exhaust gas sensors	Differential pressure sensor	P2455	Signal range check - short circuit to battery
Exhaust gas sensors	Exhaust gas temperature sensor downstream oxidation catalyst	P242C	Signal range check - short circuit to ground
Exhaust gas sensors	Exhaust gas temperature sensor upstream oxidation catalyst	P2033	Signal range check - short circuit to battery / open circuit
Exhaust gas sensors	Exhaust gas temperature sensor upstream SCR	P2470	Signal range check - short circuit to ground
Exhaust gas sensors	Exhaust gas temperature sensor upstream turbocharger turbine	P0545	Signal range check - short circuit to ground
Urea dosing system	Urea supply pump	P208A	Driver stage check - open circuit

Group	Component / System	Fault code	Monitoring strategy description
Urea dosing system	Urea dosing valve	P2047	Driver stage check - open circuit
Engine cooling system	Engine coolant thermostat	P0128	Plausibility check - comparison of measured ECT with modeled ECT
Engine cooling system	ECT sensor	P0117	Signal range check - short circuit to ground
Boost pressure system	Boost pressure sensor	P0237	Signal range check - short circuit to ground / open circuit
DCU	Reductant tank temperature sensor	P205C	Signal range check - short circuit to ground
TCU		P0562	System Voltage Low
J1699 dynamic		-	-

Attachment K

Where this list includes a component of a larger assembly, if such a component is subject to replacement under Paragraph 1.b.vii, Defendants may replace the entire assembly.

F-Nr.	Part description
04.33	Fuel injector
05.01	Turbocharger, VNT
08.01	EGR Valve (Exhaust Gas Recirculation Valve)
08.13	EGR cooler (Exhaust Gas Recirculation cooler)
02.09	Glow plug
03.02	Intake Manifold / Boost Air Distribution Line
03.05	Throttle valve step motor
03.23	Crankcase ventilation valve
03.52	Intake-port shutoff
04.32	High pressure pump
05.16	Charge air cooler (CAC)
08.17	Exhaust Gas Recirculation Line Front
20.33	MAP Sensor (Manifold air pressure sensor)
	MAP Sensor compressor
	MAP sensor charge air
36.01	Mass Air Flow Sensor
10.05	Oxidation catalyst
10.12	Sensor (exhaust back pressure)
10.13	Diesel particulate filter
10.29	Sensor (exhaust differential-pressure)
10.41	Catalyst SCR
11.01	Primary O2 sensor
11.07	NOX-sensor after DPF
	NOX-sensor after SCR-catalyst
11.14	Particulate matter sensor
12.26	Injection valve, additive
24.17	Temperature sensor exhaust gas (after DPF)
	Temperature sensor exhaust gas (before DPF)
	Temperature sensor exhaust gas (catalyst)

Attachment L**Pre-Approved OBD Noncompliances, OBD Cluster 1**

	Topic
1	Swirl Actuator Monitoring
2	Upstream NOx Sensor Monitoring
3	NOx Converting Catalyst Monitoring
4	Thermostat Monitoring
5	NMHC Catalyst Demonstration Method
6	Catalyzed PM Filter Feedgas Generation Monitoring
7	Comprehensive Component Monitoring
8	Ambient Air Temperature Sensor Monitoring
9	Boost Pressure Control Monitoring
10	Lambda Observer Monitoring
11	In-Use Monitor Performance Engine Oil Sensor Monitoring
12	NOx Sensor Upstream and Downstream Plausibility Check
13	Numerator Incrementation after Fault Detection
14	Urea Dosing Adaption
15	Air Path Adaption
16	NMHC Catalyst Feedgas Generation Monitoring
17	NOx sensor upstream: Numerator Incrementation Issue (DTC P2201)
18	Camshaft position sensor plausibility check healing behavior (P0341)
19	Throttle Valve Actuator - Driver Stage Check – Open Circuit (P2100): Additional Fault Code Entry
20	NOx Sensor Open and Short Circuit
21	Mode \$06 Test Results

Pre-Approved OBD Noncompliances, OBD Cluster 5

	Topic
1	NMHC Catalyst Feedgas Monitoring
2	Catalyzed PM Filter Monitoring
3	Comprehensive Component Out-Of-Range Monitoring
4	NMHC Catalyst Conversion Efficiency Monitor
5	NOx Converting Catalyst Conversion Efficiency
6	Fuel System Monitoring (Zero Fuel Calibration)
7	Upstream NOx sensor Numerator Tracking
8	Numerator Incrementation after Fault Detection
9	Red. Delivery Performance Monitoring
10	CSERS false MIL due to engine off timer initialization problem
11	Urea Dosing Adaption
12	Air Path Adaption
13	OBD Diagnosis Ambient Air Temperature
14	Glow Plug Fault Code Handling and Pinpointing
15	NAG2 Transmission Fault Healing
16	Throttle Valve Actuator Additional Fault Code Entry (P2101)
17	Camshaft position sensor plausibility check healing behavior (P0341)
18	NOx Sensor Open and Short Circuit

APPENDIX C

ECU Signals for In-Use Vehicle Testing with Production ECU

For purposes of Paragraph 19.b.3 of this Consent Decree only, Defendants shall collect ECU data from testing required pursuant to that Paragraph as outlined in this Appendix. Specifically, for each test required under Paragraph 19.b.3, Defendants shall collect all Priority 1 signals listed below, or their functional equivalents as listed in the AECD for the applicable Emission Modification Category, where a signal is present in the software. Defendants shall also undertake reasonable best efforts to collect the Priority 2 and Priority 3 signals listed below, or their functional equivalents as listed in the AECD for the applicable Emission Modification Category, where such signal is present in the software. In the event that Defendants identify issues during such testing with the collection and/or reliability of the signals due to the data capacity and bus speed limitation of the controller area network, Priority 2 and 3 signals will be removed from the collection list, with Priority 3 signals eliminated first.

Measurement with Production ECU via CAN (recommended) or OBD2 port.

Sample Signal Data Based on EMC 9

Description	Minimum Data Rate	Priority
Priority 1 Signals		
Intake Air Flow (MAF)	10ms	1
Post CAC Pressure	100ms	1
Intake Temperature	100ms	1
Post CAC Temperature	100ms	1
Normalized Intake Temperature	100ms	1
Air Mass Setpoint	10ms	1
Adjustment to EGR by Post CAC temperature in Normal Mode	100ms	1
Adjustment to EGR by CO2 Reduction Strategy	10ms	1
Commanded EGR	10ms	1
EGR Setpoint limitation by Lambda Min / Surge Protection	10ms	1
Surge prevention is active/transient	100ms	1
Estimated Exhaust Mass Flow after turbine	100ms	1
Coolant Temperature	100ms	1

Description	Minimum Data Rate	Priority
Engine Operating States / Mode	100ms	1
DPF pressure difference	10ms	1
Exhaust gas flow volume	100ms	1
SCR Dosing Release Conditions	100ms	1
SCR Dosing State	100ms	1
EGR Cooler Bypass Status	100ms	1
Actuator EGR-Valve	10ms	1
Engine State	10ms	1
Coolant Temperature	100ms	1
Ambient Pressure	100ms	1
Ambient Temperature	100ms	1
Engine Speed	10ms	1
SCR Downstream NOx Sensor Concentration	10ms	1
SCR Upstream NOx Sensor Concentration	10ms	1
DOC inlet temperature	100ms	1
DPF inlet temperature	100ms	1
SCR Temperature average	100ms	1
Main Injection Timing	Segment Synchronous	1
Start of Injection Adjustment by CO2 Reduction Strategy	Segment Synchronous	1
Far Post Injection Proportion	Segment Synchronous	1
Close Post Injection Proportion	Segment Synchronous	1
Diesel Injection Quantity	Segment Synchronous	1
Boost pressure target	10ms	1
DPF Surface Temperature	100ms	1
Conditions for PFI-Regeneration	100ms	1
DPF Soot Load	100ms	1

Description	Minimum Data Rate	Priority
Rail pressure set point	10ms	1
SCR Adaption factor	100ms	1
Optimal Adaption factor	100ms	1
SCR Adaptation State	10ms	1
Global release mask for Adaption	100ms	1
State of Fast Adaption	100ms	1
Status NOx-Sensor SCR upstream	100ms	1
NOx-Sensor SCR downstream massflow	100ms	1
SCR Upstream Temperature	100ms	1
State reset of optimal Adaption factor	100ms	1
Statemask reset of Fast Adaption	10ms	1
NOEA State	100ms	1
EGR delayed activation in overrun for NOx sensor monitor	100ms	1
NOx-Sensor SCR upstream Concentration for Dosing Control	100ms	1
SCRFFC Dosing Mode Bits	100ms	1
SCRFFC Dosing Mode	100ms	1
SCR total dosing amount request	100ms	1
SCR Target NH3 Fill Level	100ms	1
SCR total dosing amount	100ms	1
SCR Estimated Conversion Efficiency	100ms	1
DOC aging factor for HC oxidation	100ms	1
SCR Estimated NH3 Fill Level	100ms	1
SCR Estimated NO2:NOx Ratio	100ms	1
NOx-Sensor SCR upstream massflow	100ms	1
Normalized ATS Performance	100ms	1
Surge prevention is active/highly transient	100ms	1
Actuator Throttle-Valve	10ms	1
Transmission Gear	100ms	1

Description	Minimum Data Rate	Priority
Actuator Turbocharger LP	10ms	1
Actuator Turbocharger HP	10ms	1
Vehicle Speed	100ms	1
Base Swirl valve set point Normal mode	100ms	1
Priority 2 Signals		
Adjustment to EGR by Cold/Hot Engine Operation normal mode	100ms	2
Fault memory information	100ms	2
Fault memory information	100ms	2
DPF inlet pressure	100ms	2
EGR Cooler bypass reason	100ms	2
Base Start of injection timing Normal mode	Segment Synchronous	2
Base Start of injection timing CldStrt mode	Segment Synchronous	2
Pilot 1 Injection Proportion	Segment Synchronous	2
Pilot 2 Injection Proportion	Segment Synchronous	2
Status flag DPF regeneration	100ms	2
Continuous simulated Soot mass	100ms	2
Distance since last regeneration	100ms	2
Swirl valve position	100ms	2
NOx mass for calculation of optimal Adaption factor	100ms	2
Status NOx-Sensor SCR downstream	100ms	2
Output values Fast Adaption	100ms	2
State Refill signal freeze active	100ms	2
SCR Alternate PreCtl Target Efficiency	100ms	2
SCR catalyst aging factor	100ms	2
DPF condition Value for PM/CO2/NOx Tradeoff Strategy	100ms	2
SCR efficiency measured average OBD in Dosing	100ms	2

Description	Minimum Data Rate	Priority
SCR efficiency threshold OBD in Dosing	100ms	2
Priority 3 Signals		
Air path adaption state Idle	100ms	3
Air path adaption state Load 2	100ms	3
Air path adaption state Load 1	100ms	3
Air Mass Setpoint correction by Post CAC temperature in CldStrt Mode	10ms	3
Air Mass Setpoint correction by coolant temperature in CldStrt Mode	10ms	3
Adjustment to EGR by Post CAC temperature in CldStrt Mode	10ms	3
Base EGR set point CldStrt mode	10ms	3
Base IGR set point normal mode	10ms	3
Final IGR/EGR set point before IGR to EGR calculation and limitation	10ms	3
Adjustment to EGR by Cold Engine Operation CldStrt mode	10ms	3
Fault memory information	100ms	3
Ageing DOC factor	100ms	3
Ageing DPF factor	100ms	3
Expected difference pressure	100ms	3
Vehicle odometer	100ms	3
Start of Injection Adjustment by Engine temperature in CldStrt mode	Segment Synchronous	3
Start of Injection Adjustment by Engine temperature in CldStrt mode	Segment Synchronous	3
Start of Injection Adjustment for stabilization by engine temperature and time after start	Segment Synchronous	3
Base Pilot 1 injection quantity Normal mode	Segment Synchronous	3
Base Pilot 1 injection quantity CldStrt mode	Segment Synchronous	3
Base Pilot 2 injection quantity Normal mode	Segment Synchronous	3
Base Pilot 2 injection quantity CldStrt mode	Segment Synchronous	3
DPF Simulation active	100ms	3

Description	Minimum Data Rate	Priority
Base rail pressure set point Normal mode	10ms	3
Base rail pressure set point CldStrt mode	10ms	3
Rail Pressure	10ms	3
Adaption factor in PreCtl Mode	100ms	3
Release of Adaption	100ms	3
Requestmask of Fast Adaption	100ms	3
Calculated SCR efficiency based on NOx sensors	100ms	3
SCR Feed Forward Dosing Estimate	100ms	3
Stoichiometric Factor NH3 to NOx	100ms	3
SCRFFC Bit 13 Integrator Value	100ms	3
SCRFFC Bit 12 Temperature Thresholds	100ms	3
SCRFFC Bit 12 Temperature Thresholds	100ms	3
SCR Dosing Adjustment Applied by Load Governor	100ms	3
Maximum possible NH3 Dosing amount limited by hydrolysis	100ms	3
DPF aging factor for NO2 generation	100ms	3
Maximum possible NH3 Load	100ms	3
Estimated NOx Downstream Emission	100ms	3
Factor for PM/CO2/NOx Tradeoff Strategy based on DOC inlet Temp and DOC aging	100ms	3
Factor for PM/CO2/NOx Tradeoff Strategy based on SCR Cat Temp and DPF condition value	100ms	3
SCR Fill Level Adjustment (Heat Flux Integrator)	100ms	3
SCR Downstream Temperature	100ms	3
Enhanced DOC temperature	100ms	3
Final corrected Swirl valve set point Normal mode	100ms	3
Final corrected Swirl valve set point CldStrt mode	100ms	3
SCR efficiency measured average OBD in PreCtl	100ms	3
SCR efficiency threshold OBD in PreCtl	100ms	3

APPENDIX D

DAIMLER AG OPERATING PLAN FOR TECHNICAL AND ENVIRONMENTAL
PRODUCT COMPLIANCE

TABLE OF CONTENTS

	<u>Page</u>
I. Daimler’s Commitment to Compliance: Tone from the Top.....	3
II. Compliance-Related Organizational Functions	3
A. Technical Compliance-Related Organizational Pillars.....	4
B. Segregation of Duties.....	5
C. Safeguarding Compliance in Project Future	5
III. Daimler’s Compliance Management System (CMS)	6
A. Compliance Strategy	6
B. Integrity Code	7
C. Employee Discipline and Compensation	7
D. Whistleblower System (BPO).....	8
E. Compliance Risk Assessment and Mitigation	9
F. Business Partner Integrity Management	10
G. Communication and Training	10
H. CMS Monitoring and Improvement.....	11
IV. Daimler’s Technical Compliance Management System (tCMS).....	12
A. Foundation and Mindset (Communication and Training)	12
B. Consultation and Cross-Functional Decision-Making.....	15
1. tCMS Multipliers	15
2. Infopoint Integrity	15
3. Cross-Functional Decision-Making.....	16
C. tCMS Governance.....	17
1. tCMS Risk Assessment and Mitigation	17
2. tCMS Monitoring and Improvement (Effectiveness Evaluation).....	18
3. tCMS Control Objectives.....	19
D. Supplier Integrity Management	19
V. Technical Compliance and Certification Control Measures.....	21
A. Communicating and Understanding Regulatory Requirements	21
1. Regulatory Monitoring Meeting	21
2. Enhanced Regulatory Database	22
B. Controls on the Development Process	22
1. Systematic Derivation of Technical Specifications	22
2. Software Compliance Guide	23
3. Identification and Tracking of Disclosure-Relevant Control Parameters.....	24
4. Compliance Check by Functional Group Leaders	25
5. Cascaded Software Confirmation and Approval	25

TABLE OF CONTENTS
(continued)

	<u>Page</u>
6. Software Screening	26
a) Screening of Functions for Review	26
b) Tool-Supported Calibration Check	26
7. Testing and Verification Process	27
C. Controls on the Certification Process	28
1. Off-Cycle Testing	28
2. Emission-Related Parts List	28
3. AECD Documentation, Approval, and Review	29
D. Lifecycle Management Control	30
1. Tracking and Recording of Certified Configuration.....	30
2. Software Change Process.....	30
3. Field Software Control.....	31
VI. Internal Audit (Corporate Audit)	31
A. Corporate Audit’s Role	32
B. Post Settlement Audit Team (“PSAT”)	33
C. CA Resources Dedicated to tCMS.....	34
VII. Third-Party Review.....	34
VIII. External Communication of Compliance Efforts	35
IX. Implementation and Monitoring Office	35

Integrity—one of four core corporate values of the Daimler Group (hereinafter, “Daimler” or the “Company”), along with passion, respect, and discipline—forms the basis for all Daimler business. For Daimler, integrity means acting in accordance with ethical principles and compliance with applicable laws, internal regulations, and all corporate commitments.

With the digital transformation rapidly changing the compliance risk landscape, Daimler has enhanced its compliance strategy and target-operating model to ensure a preventive, forward-looking Compliance Management System (“CMS”) that addresses emerging compliance risks, like those around its products’ compliance with technical and environmental requirements. Daimler’s CMS is a state-of-the-art system, which Daimler strives to enhance continuously, so it can address emerging topics as broad as human rights and data compliance. Daimler’s compliance operating model reflects core corporate priorities set by the Board of Management (“BoM”), like the corporate sustainability strategy. This strategy defines key sustainability themes, including, among others, climate protection and air quality. Thus, CMS serves as a robust and agile foundation to tackle emerging topics systematically.

This Operating Plan for Technical and Environmental Product Compliance (hereinafter, “Compliance Operating Plan”) provides an overview of the following critical components of compliance and technical compliance at Daimler: 1) Daimler’s longstanding organizational commitment to integrity and compliance, 2) its compliance-related organizational functions, 3) its CMS, 4) its technical Compliance Management System (“tCMS”), 5) technical compliance and certification control measures, 6) its internal auditing department (including the interaction between that department and tCMS), 7) a third-party compliance review, and 8) the Company’s efforts to communicate its compliance efforts externally.¹ This Operating Plan also provides the Company’s future commitment to compliance through the description of planned measures or initiatives. Daimler’s current Technical Compliance Communication Plan is attached hereto as Attachment A.²

Daimler embeds compliance in its daily business operations across all Daimler global business units and functions. CMS is governed by an independent organization within Daimler—which has an integrated network across the globe—to ensure compliance in daily operations. The Company promulgates one global Integrity Code, which forms the basis of its CMS and applies to all employees and business activities worldwide. As detailed below, it has tailored its CMS to cover a comprehensive suite of controls, including a whistleblower system, business partner integrity management, intensive training and compliance communication measures to internal and external entities, an annual Risk Assessment and annual Effectiveness Evaluation (part of the

¹ Except where otherwise specified, this Compliance Operating Plan describes the current implementation of compliance efforts for the Mercedes-Benz Passenger Car division. The obligations contained in Section VII of the Consent Decree will apply to all development activities of light- and medium-duty vehicles intended for the U.S. market. As described herein, many of these efforts are scheduled for completion in coming months and years. The Company is continuously evaluating its progress towards meeting these deadlines, taking into consideration challenges posed by the COVID-19 pandemic.

² Attachment A demonstrates Daimler’s current Technical Compliance Communication Plan. This Plan is subject to adjustment as deemed necessary by Daimler.

Company's Enterprise Risk Management System), and the reflection of compliance and integrity in employee compensation and disciplinary processes.

Daimler has leveraged this existing CMS framework to create and implement a robust tCMS, which targets issues under discussion in this matter. tCMS brings together foundation and mindset initiatives through extensive communication and training programs. It also provides numerous resources for Research & Development ("R&D") engineers to facilitate technical compliance consultation and cross-functional decision-making processes. Further, it serves as a governance program that includes an annual tCMS Risk Assessment, an annual tCMS Effectiveness Evaluation, and the definition of tCMS control objectives. Finally, the supplier integrity management program seeks to ensure technical compliance from certain business partners.

Within these pillars, technical compliance is enforced and safeguarded through a series of technical compliance and certification control measures. These include measures to communicate and understand regulatory requirements, controls on the vehicle and software development process, controls on the certification process, and controls related to the lifecycle management of the vehicle.

Daimler's tCMS and technical compliance and certification controls work together as both prevention and detection measures that help ensure regulatory product conformity. Prevention measures include, for example, the segregation of duties between Certification and R&D; training, communication, and mindset initiatives; opportunities for technical compliance consultation and cross-functional decision-making; the communication of regulatory requirements; and a Software Compliance Guide. Detection measures include, for example, compliance checks by Functional Group Leaders; software screening tools; and on-demand testing and verification and off-cycle testing. Compliance is further safeguarded through lifecycle management controls, including a software change process and sample checks of software in vehicles in the field.

Daimler has a well-established and comprehensive independent internal auditing department, Corporate Audit. Corporate Audit will support and monitor the successful implementation and operation of tCMS through an audit program, pursuant to which it will identify aspects of the following to audit: 1) the design, implementation status, and effectiveness of the relevant tCMS processes, including certification processes, software development, and compliance with regulations (particularly compliance with emission standards); 2) compliance with terms of the Consent Decree; and 3) the capabilities of individuals or organizational units to carry out tasks assigned to them regarding tCMS processes or compliance with the terms of the Consent Decree. A Post-Settlement Audit Team ("PSAT") within Corporate Audit will be specifically dedicated to conducting these audits and will include members with significant technical experience.

CMS, tCMS (with technical compliance and certification control measures), and Corporate Audit work together to build an effective technical compliance program, which is detailed below.

I. Daimler's Commitment to Compliance: Tone from the Top

Compliance is an indispensable and embedded part of Daimler's culture. The tone from top-level management executives continually reinforces this commitment to compliance.

Daimler was one of the first German companies to create a BoM-level position for Integrity and Legal Affairs ("IL"). This position explicitly includes compliance. Leadership regarding Daimler's commitment to integrity and compliance comes directly from this BoM member and from the BoM as a whole. The BoM in turn reports to an independent Supervisory Board; the Supervisory Board's Audit Committee receives regular reports from the BoM member for IL and the leaders of relevant compliance functions, and regularly meets about compliance-related issues.³ Both the Chief Compliance Officer and the Vice President of Legal Product & Technical Compliance report directly to the BoM member for IL.

Daimler also established in 2012 an external, independent Advisory Board for Integrity and Corporate Responsibility (the "Advisory Board"), which includes sustainability experts from the fields of science and business, as well as from civic organizations. This expertise furnishes Daimler with critical and constructive support for integrity and corporate responsibility. The Advisory Board meets regularly with members of the BoM and other Daimler executives on various topics, including emissions topics. Daimler receives further support from leading legal and consulting firms to continuously enhance its compliance programs.

II. Compliance-Related Organizational Functions

In 2010, Daimler created a standalone Compliance Department ("IL/C"), which was formerly part of the larger Legal Department, led by the Chief Compliance Officer (an E1-level employee) who runs Daimler's CMS. Daimler later created tCMS, which is run by the Legal Product & Technical Compliance Department (hereinafter, "IL/P"), led by the Vice President of Legal Product & Technical Compliance (also an E1-level employee). Both of these departments regularly report to the Audit Committee of the Supervisory Board.

To foster cooperation among compliance-related IL functions, Daimler utilizes a Compliance Board, led by the Chief Compliance Officer. The Compliance Board is involved in

³ The German Stock Corporation Act requires Daimler AG to apply a dual management system featuring strict personal and functional separation between the BoM and the Supervisory Board. Accordingly, the BoM manages the Company while the Supervisory Board monitors and advises the BoM. In accordance with the German Codetermination Act, the Supervisory Board comprises twenty members, half of whom are elected by shareholders and half of whom are elected by Daimler employees in Germany. Supervisory Board members are obliged by law to act in the Company's best interest. Members of the Supervisory Board attend trainings on topics such as corporate governance or changes brought about by new legislation, and new members receive an "onboarding" program that gives them the opportunity to exchange views with members of the BoM and other executives on current issues related to the various areas of responsibility of the BoM.

Compliance is regularly on the agenda of the Supervisory Board and BoM meetings. At regular intervals, the BoM reports to the Supervisory Board on compliance-related topics. Together with the Supervisory Board, the BoM issues a declaration of compliance with the German Corporate Governance Code each year. The BoM ensures that provisions of applicable law, official regulations, and Daimler's internal guidelines are adhered to, and works to make sure that Daimler companies comply with those rules and regulations.

all decisions of importance to the Company's compliance management systems. It ensures harmonization of the broader future compliance landscape, such as the Company's overall compliance strategy, its standardized risk assessment, and joint monitoring of Daimler's compliance management systems. The Compliance Board also supervises the annual Effectiveness Evaluation process, the results of which are considered in the Daimler Enterprise Risk Management and Internal Control processes, thereby ensuring a holistic view of Daimler's overall compliance risk landscape.

Daimler has invested heavily in its integrity and compliance organization. Since 2013, there has been a 98%+ increase in employees in global IL departments. As of December 31, 2019, Daimler employs 574 individuals in its central IL organization at headquarters and 569 individuals in its global IL networks throughout the world. These networks are embedded throughout the Company along divisional and regional lines, and support the local aspects of the business in fulfilling their compliance duties. They safeguard compliance in the markets at an operational level. Each year, Daimler undertakes a risk assessment to determine whether additional resources are necessary. If so, additional funding is requested to create new or additional positions and/or an increased budget.

A. Technical Compliance-Related Organizational Pillars

IL/P designs and monitors the implementation of tCMS. These efforts include participating in the cross-functional decision-making process, conducting independent second-line testing of tCMS control measures, and steering Daimler-wide tCMS monitoring and improvement initiatives. IL/P has a particular focus on risk, assessing all risks connected to Daimler's products, including intellectual property-, product liability-, safety-, and certification-relevant questions, as well as risks related to emissions. This work is primarily preventive in nature and includes a robust advisory service regarding all technical legal and compliance topics. IL/P is independent from R&D and Certification and consists of an interdisciplinary expert team of lawyers (~40%; many of whom have a technical background), engineers (~30%), and business experts (~30%). This team works together to handle complex technical compliance topics, ensuring that questions of interpretation are assessed from technical, legal, financial, and reputational perspectives.

Dedicated departments within R&D implement, support, and reinforce the technical compliance system (hereinafter, "tCMS R&D"). tCMS R&D implements tCMS and forms a nexus between R&D and IL/P. tCMS R&D works to establish adequate tCMS control procedures in R&D, provide compliance and risk management guidance and technical consultation opportunities to engineers, coordinate implementation of the tCMS program elements, steer the tCMS Multiplier network, and lead the cross-functional decision-making process. tCMS R&D has a direct reporting line to the BoM member for R&D.⁴

Along with IL/P and tCMS R&D, the third key partner in Daimler's implementation of technical compliance is the Certification Department ("Certification"). Core Certification

⁴ Daimler created sixty-one new positions within the R&D department at Mercedes-Benz Cars dedicated to tCMS and twenty new positions in the R&D department at Mercedes-Benz Van.

processes include homologation, the preparation and submission of applications for Certificates of Conformity (including AECD disclosures), vehicle type approval, and regulatory screening. In fulfilling these duties, Certification has implemented its own controls to ensure technical compliance. Certification reports to the Head of Quality Management.

The U.S. legal and compliance organization is part of the global IL organization. Along with U.S. lawyers, this organization includes a newly established technical compliance officer position. In addition, Daimler is currently in the process of building its tCMS R&D organization in the United States. It has hired a senior manager for regulatory and technical compliance processes, who reports to IL, as well as a manager and staff in the tCMS R&D organization who report to tCMS R&D Germany. Daimler will also establish six local tCMS multipliers in the global tCMS R&D organization. These teams, including in Ann Arbor, Michigan, and Long Beach and Sunnydale, California, will address technical compliance inquiries and will identify specific training demands. One additional multiplier for the Seattle, Washington location will be nominated in 2020.

B. Segregation of Duties

Daimler safeguards the independence of Certification with a clear segregation of duties, which is enforced through different reporting lines. Historically, Certification resided within R&D. In September 2018, Certification moved from R&D to an entirely separate organization: Quality Management (“QM”). Certification combines technical competence with the ability to challenge other aspects of the organization from the perspective of regulatory authorities. Moving Certification to QM further enables it to challenge R&D when necessary, and fits within the existing QM framework. R&D and QM report to different BoM members. Likewise, IL, which remains segregated from both Certification and R&D, also reports to a different BoM member. Corporate Audit also primarily reports to a different BoM member than Certification and R&D.

C. Safeguarding Compliance in Project Future

On May 22, 2019, shareholders approved the reorganization of the Daimler Group through “Project Future.” Project Future resulted in Daimler AG operating as three legally distinct entities: Mercedes-Benz AG, Daimler Truck AG, and Daimler Mobility AG. These three entities are fully owned subsidiaries of Daimler AG, the parent company. Daimler launched the new corporate structure on November 1, 2019. Under this new structure, Daimler AG exercises corporate governance, strategy, and management functions, and provides cross-divisional business services. Daimler has ensured ongoing commitment to integrity and compliance through binding policies or procedures and reporting lines of relevant governance and control functions. IL remains a corporate-level function within Daimler AG, ensuring continued oversight and implementation of compliance, including through annual effectiveness evaluations. The tCMS R&D departments for Mercedes-Benz Passenger Cars and Mercedes-Benz Vans are part of the newly formed Mercedes-Benz AG.

III. Daimler’s Compliance Management System (CMS)

Daimler’s CMS enforces basic principles and measures intended to promote values-based compliant behavior throughout the Company. CMS reflects national and international standards and applies to all Daimler central units and majority-owned shareholdings. This Section addresses selected CMS topics important for technical and environmental product compliance; it does not include every aspect of CMS.

A. Compliance Strategy

In recent years, Daimler has implemented vital changes in its overall compliance strategy. Historically, Daimler’s robust CMS focused—like in most large, multinational organizations—on traditional corporate compliance topics, such as corruption and other business crimes. More recently, the digital transformation and technological progress significantly altered the corporate strategy and business models of automotive companies, including Daimler. The major trends in the automotive industry’s ongoing transformation are often encapsulated by the acronym “CASE,” which stands for connected, autonomous, shared, and electric. Daimler’s senior leadership has decided to address CASE and the broader evolution of the business landscape by defining an ambitious sustainability strategy and by analyzing the impact on key compliance risk areas. The results of this analysis form the basis of the current compliance strategy and extend well beyond traditional compliance topics.

Today’s corporate compliance strategy at Daimler sees compliance as an end-to-end, value-chain-integrated function, characterized by the following:

- **A robust foundation** of well-established core elements, which constitute the operating model for compliance at Daimler. These core elements have undergone continuous improvement, with confirmation from a number of internal and external audits. Daimler has broadened its compliance strategy in recent years, applying this foundation to systematically address emerging compliance topics such as technical compliance, human rights, and data compliance.
- **Broad interdisciplinary expertise at the central IL department** to understand and appropriately manage emerging compliance topics. This is why IL/P is made up of an interdisciplinary team of lawyers ($\approx 40\%$; many of whom have a technical background), engineers ($\approx 30\%$), and business experts ($\approx 30\%$). It is also why IL/C houses the position of the Chief Digital Risk Officer, reflecting Daimler’s awareness of the broad range of potential compliance risks resulting from digitization. In addition, experts on human rights, autonomous driving, and other emerging corporate compliance topics fill recently established positions at IL.
- **An updated governance model** with a Compliance Board established in 2018 to steer and monitor the implementation of Daimler’s compliance strategy. The Compliance Board focuses on programmatic aspects that affect multiple compliance topics, including the consistent management of risk areas.
- **An increased agility** to support a preventive, forward-looking CMS. This agility is a direct result of the building blocks already mentioned. Interdisciplinary expertise helps

compliance staff evaluate the relevance of emerging compliance topics, while robust core elements of the CMS provide a blueprint for systemizing relevant topics, with the Compliance Board to oversee this process.

Because of this framework and foundation, Daimler can address emerging compliance risks, like technical or data compliance, through an already-effective structure. Additional topics like human rights compliance have also been enhanced and are now subject to central IL governance.

B. Integrity Code

Daimler has one global Integrity Code, available on Daimler's website, binding for all employees. Daimler employees may easily access through a dedicated Integrity Code Microsite guidance on how to apply the Integrity Code in everyday Company life, including by reviewing frequently asked questions. In 2016, and again in 2019, the Daimler Integrity Code was rated best in class by the German magazine *Compliance Manager*, which compared the codes of the top thirty DAX (German stock market index) companies.

These accolades notwithstanding, Daimler launched an ambitious process to enhance its Integrity Code, incorporating input from its employees, internal and external subject matter experts, and its external Integrity Advisory Board, and issued an enhanced Integrity Code in October 2019. One important aim of this initiative was to strengthen emphasis on technical compliance and environmental protection in the Integrity Code. The enhanced Integrity Code emphasizes Daimler's goal of reducing emissions and improving air quality, and underscores the importance of conforming products and processes to laws and regulations, while also emphasizing the need to consider the underlying aims of these laws and regulations. Finally, it counsels employees to consider the full impact of their actions and speak up to identify and address potential risks. The enhanced Integrity Code is available in ten languages on the Company's Intranet, including English. Based on the BoM approval in June 2019, worldwide rollout of the enhanced Integrity Code started in October 2019 supported by a broad communication initiative, which utilized the Daimler Intranet, the Integrity Code Microsite, Infopoint Integrity, FAQs, brochures, and "Tone from the Top" statements, such as a preface signed by the entire BoM. External and internal communications experts support this effort.

Furthermore, the enhanced Integrity Code is the foundation for the new 2020 Integrity@Work training. This enhanced training is mandatory for all white-collar employees. Daimler will also measure awareness of the Integrity Code via an employee survey. The enhanced Integrity Code will continue to be the legal and ethical framework for all Daimler entities.

C. Employee Discipline and Compensation

Compliance is part of Daimler's corporate culture and thus is embedded in its compensation and disciplinary processes. Daimler began to integrate compliance and integrity into its compensation processes in 2010. A change in the variable compensation system for senior and middle managers occurred in 2017, pursuant to which variable compensation was based solely on company success, *i.e.*, one common target. This helps ensure that individual employee

decisions are unlikely to impact that employee's variable compensation. By decoupling the specific performance of a unit or business segment from individual compensation, Daimler aims to disincentivize potentially noncompliant behavior, as the upside of misconduct becomes much smaller than the potential downside for each employee. Daimler changed its variable compensation system again in 2019. Among other performance factors, Daimler has incorporated integrity into its variable compensation structure for managers.⁵ The financial incentives for senior and middle managers are directly linked to the results of select questions from the relevant employee surveys.

Regardless of management level, compliance requirements apply to all employees, and employees are subject to disciplinary measures in the event of violations. Daimler policies provide for disciplinary action when employees violate any general or technical compliance-related requirements.

Based on experience with this newly implemented compensation model, Daimler will evaluate whether to make further adjustments in 2020.

D. Whistleblower System (BPO)

Daimler's whistleblower system, the Business Practices Office ("BPO"), protects Daimler's values, employees, and assets by ensuring that potential misconduct is effectively reported, assessed, investigated, and mitigated. The BPO serves as a single corporate-level processing center for any incidence of suspected misconduct.

The BPO allows Daimler employees and external parties alike to report any suspected misconduct anywhere in the world. The BPO is available around the clock to receive information by email or post. An external toll-free hotline is also available in the United States, Brazil, Japan, and South Africa. Reports can be submitted anonymously if local laws permit. In Germany, reports to the BPO can also be submitted via a Neutral Intermediary (*e.g.*, via phone or email), who is an independent external attorney. In 2019, the BPO Neutral Intermediary received training on vehicle emissions and certification compliance issues and an independent tCMS expert contact point to clarify vehicle emissions and certification compliance questions. She also participated in an expert-level dialogue with IL/P and an external technical expert regarding vehicle emissions and certification compliance risks.

In an effort to increase trust in, and awareness of, the whistleblower system, the Company has established a continuous communication process that includes the periodic provision of information to employees about the type and number of reported violations, as well as information about measures taken in response to BPO cases. Daimler encourages employees to report potential misconduct via various communication channels, and all managers have a duty to report "serious" risk incidents. Global surveys and benchmarking around the number of contacts with the BPO indicate that employees are aware of, and are comfortable with using, the BPO.

⁵ This change did not affect BoM member compensation. Integrity was a factor in BoM member compensation prior to 2019.

In 2018, Daimler enhanced the BPO by adding an E4-level position (with engineering experience) for handling technical compliance cases, among other measures. It also updated its Treatment of Violations Policy, attached hereto as Attachment B. The Policy, which underlies the work of the BPO, features a risk-based approach to differentiate between serious and minor violations, and it imposes different reporting obligations depending on whether the violation is serious or minor. Daimler’s list of “violations posing a serious risk” to the Company includes violations related to “*environmental regulations*” and “*engineering specifications and/or technical safety*.” In 2020, Daimler will clarify in its Treatment of Violations Policy and in related training that environmental noncompliance of a product within the U.S. always constitutes “serious risk.” The Company has also formalized and documented the requirement that the BPO employees assigned to any reported potential environmental/technical compliance violation discuss such a report with the head of the BPO in person, in accordance with Daimler’s four-eyes principle.

In 2019 and 2020, Daimler has and will continue to intensify its efforts to raise awareness and trust of the BPO, particularly with respect to R&D engineers, by launching a new two-year communication campaign within R&D to promote the BPO (*e.g.*, with the use of global BPO screen locks, web-based and face-to-face training, and promotional materials). This includes communicating to employees a real-life BPO technical compliance case via Daimler’s social Intranet, introduction of the BPO technical compliance case manager via the social Intranet, BPO promotional messages displayed on cafeteria screens in select locations, posters for factory floor meetings, knowledge cards/pocket guides for all employees, and a BPO promotional truck. This communication campaign will last until at least the end of 2021. The role of the BPO is also part of Daimler’s business partner training awareness modules.

Daimler has started to leverage the BPO to conduct root-cause analyses to understand and identify patterns in misconduct and prevent recurrence.

Daimler has implemented a new IT system to safeguard the four-eyes principle in BPO cases, *i.e.*, to ensure that a BPO case cannot be closed without review by two BPO employees.

E. Compliance Risk Assessment and Mitigation

Daimler systematically aims to mitigate compliance risks. Each year, IL analyzes and assesses the compliance risks of all Daimler-controlled entities (*e.g.*, entities in which Daimler owns a majority stake). These analyses are based on business entities’ characteristics, such as business models and revenue, and on self-assessment questionnaires completed by relevant Daimler business leaders. The results of the Risk Assessment form the basis for the implementation of centrally defined risk-mitigating measures. The scope of the compliance Risk Assessment is continuously extended to emerging compliance topics. Daimler built on its existing Risk Assessment processes to create a Risk Assessment for tCMS. See Section IV.C.1. for information regarding the tCMS Risk Assessment.

In 2019, Daimler further harmonized its compliance Risk Assessment processes to continue to foster a proactive and holistic approach to compliance risk management. All of the Company’s compliance Risk Assessments (*e.g.*, its tCMS Risk Assessment, its Antitrust Risk Assessment, etc.) are coordinated in an Integrated Compliance Risk Assessment (“ICRA+”),

which brings together compliance risk assessments into a single process, on a single timeline, and using the same IT infrastructure. A new joint compliance IT tool supports this process.

In 2020, Daimler established a new Steering Committee ICRA & Monitoring Improvements (“SteCo ICRA & Monitoring”) to discuss further improvements to its compliance risk management process, such as the use of additional digitalization opportunities. The SteCo ICRA & Monitoring consists of senior management from the compliance-related IL functions.

F. Business Partner Integrity Management

Daimler integrates business partner (including supplier) compliance into its CMS through its business partner integrity management program. Key elements of the business partner program are 1) diligent selection; 2) contractual safeguarding; 3) awareness and training; and 4) monitoring and response measures. First, Daimler employs a risk-based due diligence process before determining whether to enter into a business relationship with another entity, including integrated background checks and, in certain circumstances, mandatory on-site audits. Daimler uses a thorough diligence-based process for both new contracts and the renewal of contracts with existing partners to confirm that its business partners comply with its integrity and compliance principles. Daimler also ensures that compliance clauses appear in all standard contracts. It raises integrity and compliance awareness with its business partners through voluntary online awareness/communication modules and face-to-face sessions. Finally, Daimler monitors the actions of its business partners to identify and respond to integrity and compliance concerns. Consequences for business partners that fail to meet Daimler’s integrity and compliance standards include possible termination of business relations.

Daimler’s communications and sensitization efforts, *see* Section III.G., extend to business partners. For example, it provides to sales business partners that sell Daimler vehicles or vehicle parts and suppliers⁶ Compliance Awareness Modules (“CAM”), which include information on compliance topics and contact information for Daimler’s BPO. In 2019, Daimler updated the content of its sales CAM and began rollout to sales business partners. In addition, it will implement an automatic CAM invitation process for every new sales business partner by the end of 2020. *See* Section IV.D. for information regarding supplier integrity management related to technical compliance.

G. Communication and Training

Integrity and compliance communication at Daimler is managed through close cooperation between the responsible departments and the central communications department. Daimler works to target specific employee groups with tailored compliance messages. In doing so, it strives to achieve a balance between permanently available information and specific, event-driven communications.

⁶ The supplier compliance provisions contained herein are generally intended to reach those suppliers which Daimler have a contractual relationship with and which directly provide to Daimler Emission-related software, Emission-related software calibrations, or Emission-related hardware parts for use in vehicles intended for certification in the United States or California.

Daimler allocates training modules to certain employee groups based on a central requirement assessment and an annual planning exercise, taking into account the groups' respective roles and functions. For example, mandatory web-based employee training on several compliance topics, including the Integrity Code, occurs at least once every three years; new white-collar employees are required to complete this training within 90 days. A dedicated central training department steers Daimler's systematic approach and target group-oriented specific expert modules. In addition to these central assignments, managers can assign other relevant trainings to their staff. System-based reporting functionalities and automated reminders support the managers in fulfilling their duty to track completion rates. Facilitated by an advanced IT platform, Daimler takes a systematic and practical approach to continuously adapt its compliance trainings to prevent potential compliance violations; this includes identifying and adding emerging compliance topics (*e.g.*, technical compliance) to training materials. The BoM frequently receives updates on the status of compliance trainings and, if necessary, initiates measures to improve training programs.

Supplementing the centrally promulgated web-based trainings, Daimler's local IL networks, which consist of qualified compliance experts, provide in-person trainings that reflect the specific risk profiles of their entities. This is supported by Daimler's central training department, which provides standardized materials, methods, and infrastructure for documentation.

See Section IV.A. for additional details regarding technical compliance communication and training measures.

H. CMS Monitoring and Improvement

Constant monitoring and improvement—both to enhance the performance of existing processes and to ensure that programmatic elements adjust to meet the Company's evolving risk profile—are hallmarks of Daimler's CMS. First, leaders of core compliance functions evaluate the effectiveness of CMS in the annual Effectiveness Evaluation. The Compliance Board, led by the Chief Compliance Officer, considers these evaluations and reports the results of its analysis to the Group Risk Management Committee, which assesses enterprise risks.⁷ Next, the results are entered into Daimler's internal control system and risk and opportunity reports. The BoM and Supervisory Board have overall responsibility for the internal control system and continuously receive reports monitoring compliance risk mitigation measures.

These processes were expanded in 2017 to cover tCMS—the Vice President of Legal Product & Technical Compliance became a regular member of the Group Risk Management Committee in 2017, and Effectiveness Evaluations of tCMS began in 2017. See Section IV.C.2. for information regarding the tCMS Effectiveness Evaluation.

⁷ The Group Risk Management Committee consists of members from accounting, legal, CMS, tCMS, and Corporate Audit, and is led by the CFO.

IV. Daimler's Technical Compliance Management System (tCMS)

The BoM has defined technical compliance as a core corporate compliance objective.⁸ For Daimler, technical compliance means adhering to technical and environmental regulations, standards, and laws, while taking into account the fundamental aims of these laws and regulations. Daimler enhanced its existing CMS with additional measures and processes to create tCMS. tCMS's primary objective is to address all significant technical and environmental risks arising during the product life cycle, including risks related to emissions, safety, new technologies, and certification. Initially, tCMS is focusing primarily on environmental risk (vehicle emissions in particular), but is gradually expanding to encompass all other significant corporate risks in these areas.

tCMS's work comes to life through three core pillars: 1) **foundation and mindset**, *i.e.*, training and values-based mindset initiatives; 2) **consultation and cross-functional decision-making**, *i.e.*, offering multiple points of contact and processes to support and guide employees with technical compliance questions or requests for consultation; and 3) **tCMS Governance**, which safeguards compliance by identifying and mitigating technical and environmental compliance risks, conducting an annual Effectiveness Evaluation, and defining control objectives. In addition, tCMS involves the implementation of several technical compliance and certification control measures, described in Section V. These measures are crucial elements that help ensure that R&D products comply with regulatory requirements and internal standards and are robustly documented and disclosed.

Working in the context of these core pillars, multiple functions within Daimler help to safeguard technical compliance. As discussed in Section II.A., IL/P designs and monitors the effectiveness of tCMS. R&D, which develops engines, engine control units, software functions, and function calibrations, is considered the "risk owner." Operating within R&D, dedicated tCMS R&D units house experts in technical compliance who report directly to the respective heads of R&D. The tCMS Multiplier Network serves as a link between R&D and compliance functions. Complex questions regarding technical compliance are evaluated and resolved through an interdisciplinary clearing process that takes into account technical and legal criteria. Sitting within QM, Certification is also a partner in technical compliance, with its own independent controls augmenting the work of tCMS R&D.

A. Foundation and Mindset (Communication and Training)

The first pillar of tCMS is *foundation and mindset*. Building upon the foundation of the Company's CMS, *foundation and mindset* seeks to build a technical compliance culture (known as technical integrity) within Daimler. To further this goal, R&D leadership developed and committed itself to two key guiding principles, in addition to those within the Integrity Code:

⁸ To ensure that the BoM and Supervisory Board are fully informed regarding technical compliance, informational resources are offered to individuals who perform supervisory and management functions. New members of the Supervisory Board receive comprehensive training, including on technical compliance management.

Speak Up: “We identify insecurities and risks as early as possible, and initiate resolving them. We address issues responsibly and constructively.”

Judgment Calls: “We take into account not only our business interests but also the expectations of our customers and society. We make decisions transparent and document them along with the considerations upon which they are based.”

These principles provide a common understanding and orientation for all R&D employees. In 2018, senior and middle R&D management participated in six-hour face-to-face technical integrity workshops to deepen their understanding about technical integrity, raise awareness, encourage the “Speak Up” principle, and empower managers to perform follow-up processes. Additionally, these principles, which are communicated to employees through ongoing trainings and workshops, provide basic orientation around technical compliance and integrity.

tCMS-focused training and guidance resources help ensure that R&D employees begin the development process with a technical compliance foundation and knowledge of regulatory requirements and internal standards. With the advent of tCMS, Daimler began providing tCMS training in face-to-face sessions to help ensure that the relevant employee groups had a full understanding of the new systems and processes. All relevant existing R&D employees have been instructed to attend in-person training regarding tCMS values and program elements. The content of this training includes 1) the purpose and scope of tCMS; 2) the guiding “Speak Up” and “Judgment Calls” principles; 3) the principles of tCMS; and 4) tCMS options for support, including the introduction of relevant contact persons. Daimler’s training approach on technical compliance includes a comprehensive introduction to tCMS, interactive elements to test knowledge regarding tCMS and an interactive case study application, and an introduction to decision-making processes via Daimler’s committee structures. These tCMS trainings also include a component on certification topics, including 1) resources for information regarding regulatory requirements; 2) details of the certification process; 3) the interrelation between development and certification; and 4) points of contact. Trainees’ tCMS knowledge levels are assessed before and after training sessions through surveys and feedback cards. Daimler uses trainee feedback to improve the quality of the trainings.

More than 21,700 Mercedes-Benz Cars employees and more than 1,600 Mercedes-Benz Vans employees have been trained in face-to-face technical compliance training meetings, representing more than 96% of all permanent employees in R&D. Approximately 550 MBRDNA employees have also received tCMS training, representing 85% of total MBRDNA employees. Currently, new employees also receive face-to-face tCMS training. In 2019, Daimler began providing mandatory web-based tCMS training. This training launched in April 2019 for the Mercedes-Benz Passenger Cars and in September 2019 for Mercedes-Benz Vans. The tCMS training program reflects the results of the tCMS Risk Assessment for 2018, *see* Section IV.C.1., among other factors. The tCMS Risk Assessment will continue to inform the content of tCMS training going forward so that emerging areas of risk may be addressed.

Certification also provided specific training to R&D U.S. powertrain employees who work on emissions and OBD topics. Emissions certification trainings addressed certification requirements, emissions and fuel consumption testing, AECD disclosure requirements, and

running changes and aftersales topics. OBD training materials covered OBD systems in motor vehicles, how OBD systems work, worldwide OBD requirements, potential causes of non-conformance in OBD systems, addressing potential instances of non-conformance during and after certification, U.S. OBD regulations, and links to further information.

Daimler, through Certification, now provides a specific, mandatory training on U.S. and California air emissions regulations, including fuel consumption testing, running changes, OBD, AECDs, and defeat devices, to relevant R&D employees, periodically evaluating which employees should receive this training.

In late 2017, training was provided by tCMS R&D, IL/P, Certification, and outside counsel to MBRDNA employees located in Long Beach, California, and Redford, Michigan, regarding regulatory requirements for AECD disclosure and the prohibition of defeat devices. During this in-person training, MBRDNA employees were able to ask questions and pose hypotheticals about the application of AECD and defeat device regulations and guidance to real-life engineering situations. R&D employees in Germany also received this training in 2017 and 2018.

In addition, in 2018, Certification provided AECD Documentation Guidelines, attached hereto as Attachment C, to relevant R&D departments in Germany. These Guidelines summarize regulatory requirements regarding AECD disclosures and the prohibition of defeat devices, and provide 1) guidance interpreting the regulatory text; 2) details regarding each of the regulatory justifications for AECDs; 3) Daimler's best practices on AECD disclosures; 4) common AECD examples; 5) other considerations such as the necessity of functions, the interaction between AECDs and baseline calibrations, and specific risk-related aspects of functions; and 6) practical guidance for reviewing functions/calibrations and updating of AECD disclosures. Daimler has updated and will continue to update, as necessary, and redistribute these Guidelines to relevant employees.

These efforts foster general awareness of technical compliance issues, including AECD disclosure requirements and the prohibition of defeat devices; they do not, however, represent the entire control system for generating appropriate AECD disclosures, discussed in more detail in Section V.C.3, or for ensuring that defeat devices are not used. Furthermore, employees involved in the development and description of emissions controls can consult their peer network (including the tCMS Multipliers), Certification, and IL/P when they have questions regarding, for instance, the development of compliant emissions control systems or AECDs. In addition, the newly established Functional Group system provides guidance to all employees involved in the development of these functions, *see* Section V.B.4. Moreover, as discussed in Section V, Daimler employs various technical compliance and certification control measures that are specifically related to ensuring the accurate identification and justification of functions which should be disclosed as AECDs and preventing the development and use of defeat devices. This approach recognizes that the development of compliant emissions controls and AECDs is a multidimensional effort; training is merely one aspect of the oversight and guidance that is available to employees.

In addition to training employees, Daimler communicates the importance of tCMS with a wide range of internal promotional activities that ingrain tCMS in the broader organization.

These efforts include raising awareness of technical compliance among the entire Daimler employee base, target-group oriented communications, repeated communication by top management across various channels, and dozens of internal promotional initiatives in 2017 and 2018. See Attachment A: Daimler’s Technical Compliance Communication Plan for details regarding planned promotional initiatives.

B. Consultation and Cross-Functional Decision-Making

The second major pillar of tCMS is *consultation and cross-functional decision-making*. Daimler offers multiple points of contact and processes to provide support and guidance for employees regarding technical compliance matters. It has implemented an intertwined and effective consultation network throughout R&D, which consists of 1) the tCMS organization, discussed in Section II.A.; 2) tCMS Multipliers; and 3) Infopoint Integrity. In addition, Daimler has established a cross-functional decision-making process to consider complex technical compliance questions.

1. tCMS Multipliers

R&D makes key technical decisions during the development of Daimler products and owns the risk related to such decisions. Daimler installed the tCMS Multiplier network in 2017 as a contact system for technical compliance in R&D, linking risk management and tCMS directly to the departments where technical decisions are made. The Multipliers serve as the first point of contact within R&D when an employee has a technical compliance question, concern, or conflict of interest. The Multipliers are persons of trust with natural authority—sometimes managers, sometimes experienced engineers. This system allows engineers to consult with other engineers. The Multipliers are not, however, supervisors and do not have disciplinary authority. This is by design; although Daimler expects its employees to report all misconduct, and provides a whistleblower system to do so, the Multiplier system is designed to encourage engineers to contact the Multipliers with difficult questions without fear of retribution. The tCMS Multipliers receive mandatory onboarding training related to technical compliance, and participate in monthly network meetings and periodic special trainings where they can exchange information and discuss lessons learned. Currently, Daimler employs approximately 110 Multipliers. The Multiplier network is implemented according to risk, and thus is currently focused on higher-risk areas such as emissions compliance. A specific tCMS Multiplier is mandatory for all departments with an elevated technical compliance risk exposure according to the tCMS Risk Assessment. The network will continue to grow to reflect the expanding scope of tCMS.

2. Infopoint Integrity

Daimler provides “Infopoint Integrity” to its employees as an additional consultation resource and available reporting channel.⁹ Infopoint Integrity is a hotline accessible to all employees, which serves as a point of contact for all integrity issues, including questions related to technical compliance. Infopoint Integrity works as follows: when a question is received, it is assigned to one of numerous categories, including potentially “technical compliance”; Infopoint

⁹ Infopoint Integrity employees are instructed to report cases of potential noncompliance to the BPO.

Integrity will then put the employee into contact with the relevant subject matter experts for technical consultation (including, potentially, relevant Daimler lawyers). In 2018, Daimler began emphasizing the use of Infopoint Integrity for inquiries regarding technical compliance and began utilizing employees trained in technical compliance in the Infopoint Integrity system.

3. Cross-Functional Decision-Making

Difficult and complex questions often arise during the product development process. Daimler utilizes cross-functional decision-making processes to resolve so-called “Clearing Cases,” which are questions or issues that:

- arise during product development; and
- are related to technical regulatory requirements or technical compliance-related questions; and
- require cross-functional decision-making across different departments.

Daimler employees may report potential Clearing Cases via tCMS R&D, Infopoint Integrity, tCMS Multipliers, and/or IL/P. All potential Clearing Cases are ultimately forwarded to tCMS R&D. Clearing Teams, comprising members from IL/P, tCMS R&D, and Certification, analyze and validate potential Clearing Cases, and decide whether the reported issue qualifies as a Clearing Case. If the Clearing Team determines that the issue is not a Clearing Case and escalation is unnecessary, it provides feedback to the relevant employee. If the reported issue qualifies as a Clearing Case, the Clearing Team escalates the matter to the Technical Compliance Committee (“TCC”) with a recommendation for further consideration and decision. The TCC, led by tCMS R&D, mainly consists of E2-level representatives from IL/P, R&D, Certification, tCMS R&D, Communications, and External Affairs. It is scheduled to meet at least monthly.

If the TCC cannot reach a decision, it escalates the matter to the Engineering Practices Board (“EPB”), which meets quarterly (or more frequently as needed). The EPB largely consists of E1-level representatives from IL/P, R&D, Certification, tCMS R&D, Communications, and External Affairs. If the EPB reaches no decision, the issue is escalated to a BoM-level committee. The decisions made at each step of this process by each committee are binding.

In 2019, Daimler introduced a “non-personal email address” (*i.e.*, a general mailbox not specific to an individual) that employees can use to pose questions regarding technical compliance.

These multiple advisory and decision-making functions provide ample opportunity for employees to raise and escalate questions and concerns regarding technical compliance. To avoid silos of information, clear communication processes ensure that issues and decisions flow to the relevant functions. All potential Clearing Cases are ultimately forwarded to tCMS R&D. Technical compliance decisions are typically made cross-functionally, bringing together engineers, lawyers, and certification personnel to ensure that all relevant experts have a stake in the decision-making process.

C. tCMS Governance

The third key pillar of tCMS is *governance*. The main aspects of the tCMS governance element are 1) risk assessment and risk mitigation; 2) reporting and monitoring; and 3) tCMS controls.

1. tCMS Risk Assessment and Mitigation

As described in Section III.E., Daimler conducts an annual Risk Assessment for its CMS. In 2017, Daimler adopted this methodology for technical compliance risks, creating a tCMS Risk Assessment that occurs annually. The tCMS Risk Assessment is designed to measure the technical compliance and environmental risk exposure of R&D departments, and identify the specific risks existing within each of those departments. Based on the results of the Risk Assessment, IL/P assigns responsibility for and monitors the implementation of risk-mitigating measures.

Run by a group within IL/P that collectively has a legal, compliance, and engineering background, and experience with R&D processes, the tCMS Risk Assessment provides a structured and systematic approach to assess the technical compliance risk exposure of departments within the scope of the Risk Assessment. As a first step, the IL/P group identifies which R&D departments are within that scope, *e.g.*, departments relevant to emissions, safety, and corporate adherence to environmental regulations. In 2019, approximately 340 departments fell within the scope of the tCMS Risk Assessment.

After identifying the relevant departments, the group within IL/P develops a survey relating to areas of responsibility and the tasks of respective departments. Multiple working sessions help to draft survey questions geared to measure relevant risk (*e.g.*, risks related to emissions and U.S. certification processes) among the various departments. Daimler undertook a pilot process in 2017 to validate the effectiveness of the survey questions, pursuant to which IL/P consulted with experts on a departmental basis to verify whether survey results reflected the risk exposure perceived by those experts. This analysis demonstrated a close correlation between expert-identified risks and the results of the survey. Survey questions were further refined as a result of this process. Daimler repeated this process in 2019 and will repeat this process on an annual basis. Additionally, the survey will be refined annually to incorporate lessons learned from the previous year, newly identified risks, and outcomes of the annual effectiveness evaluation, as well as other information sources, such as Corporate Audit reports.

After development of the survey, Daimler uses an IT tool that solicits survey responses from the leaders of all departments that are within the scope of the tCMS Risk Assessment. The survey, consisting of approximately thirty questions, is typically provided mid-year; recipients have six to eight weeks to complete the survey. Daimler also considers feedback regarding environmental compliance risks and suggested improvements provided via established consultation channels such as the tCMS multiplier network, and/or via the BPO. In 2020, Daimler will include in the tCMS Risk Assessment survey a statement inviting anonymous feedback through the BPO. Based on the this information, IL/P uses a predefined evaluation method to calculate the risk exposure of the relevant departments and assigns a risk rating (High, Medium, or Low) for each assessed department.

For any department assigned a “Medium” rating, IL/P and tCMS R&D conduct a manual review to determine whether any department should be elevated to “High” risk. Once the final levels have been determined, the results of the tCMS Risk Assessment are communicated to all evaluated departments. IL/P conducts face-to-face Risk Assessment review meetings with departments with “High” risk ratings to develop a more detailed understanding of how specific tCMS risks manifest in each department. As a result of these meetings, IL/P assigns mitigation measures and documents them in an IT tracking tool, which helps to ensure that these measures are consolidated and available for review for timely implementation. Daimler conducts sample checks of mitigation measures to evaluate the effectiveness of these measures and will annually update the tCMS Risk Assessment to improve the identification of risks and the completion of mitigation measures. Daimler convenes specific taskforces to address more urgent ad hoc risks that emerge outside of this standardized annual process.

In 2019, Daimler started to fully integrate the tCMS Risk Assessment into the Company’s overarching CMS Risk Assessment process to create a holistic view of all Company-wide compliance risks. This integration means that the tCMS Risk Assessment can utilize common IT tools, infrastructure, timelines, and management reporting obligations.

Beginning in 2020, in conjunction with each annual tCMS Risk Assessment, Daimler will determine the effectiveness of prior year Assessments and refine the following year Assessment based on this determination.

2. tCMS Monitoring and Improvement (Effectiveness Evaluation)

Leveraging the same principles discussed in Section III.H. regarding the CMS Effectiveness Evaluation, IL/P employs a structured annual monitoring and reporting process to conduct an Effectiveness Evaluation of tCMS program elements based on predefined effectiveness criteria for each program element. These criteria are different for and tailored to each program element. For example, with respect to the cross-functional decision-making process, some of the criteria that inform the Effectiveness Evaluation are as follows:

- Whether a comprehensive clearing process for technical-compliance-relevant questions has been established;
- Whether the availability of these committees has been communicated to relevant employees;¹⁰
- Whether committees meet on a regular basis; and
- Whether decisions are documented and communicated to the relevant departments.

The monitoring process uses, among other things, interviews of relevant employees and self-assessments, and evaluation of feedback received through consultation channels such as the

¹⁰ Relevant employees receive mandatory training on the purpose of the clearing processes and the expectation that they utilize these resources. The tCMS training processes are also subject to an Effectiveness Evaluation.

tCMS multiplier network or via the BPO to verify that the tCMS program elements are effective. IL/P conducts these evaluations and reports the results at least annually to the Compliance Board, the Group Risk Management Committee, the BoM, and the Audit Committee of the Supervisory Board.¹¹ If an element is found to be ineffective, IL/P initiates measures to improve the relevant control. The responsible department then implements these measures as part of a continuous improvement process. If IL/P determines that an ineffective element could potentially endanger the entire tCMS, it triggers immediate emergency measures.

Beginning in 2019, the Effectiveness Evaluation evaluates, in part, whether control objectives, discussed *infra*, are being met.

3. tCMS Control Objectives

In 2018, Daimler began implementing control measures to monitor the processes that help ensure a complete, accurate, and legitimate development process, and that help ensure the complete documentation of development results for certification in accordance with regulatory requirements. Those control measures seek to mitigate risks identified either by the tCMS Risk Assessment or by engineers and other employees on an ad hoc basis. IL/P conducts sample testing of the technical compliance control measures to provide independent, second-line verification. Current control objectives, which are still being implemented through these control measures, include the following:

- Relevant regulatory requirements are communicated to all relevant personnel.
- AECD disclosure-relevant software functionalities related to emissions are identified and will be tracked.
- AECD documentation-relevant software functionalities are correctly described and implemented.
- Regulatory compliance of all disclosure-relevant software functionalities and regulatory conformity of respective documentations.

Specific technical compliance and certification control measures help to implement these objectives, discussed in Section V. IL/P will reevaluate tCMS control objectives on an annual basis and will identify tCMS control objectives to monitor processes used for vehicle environmental compliance including detecting and disclosing AECDS and detecting and preventing defeat devices.

D. Supplier Integrity Management

Daimler recognizes that its suppliers¹² are critical to fulfilling its commitment to conducting business in a compliant manner. Daimler therefore expects its suppliers to implement

¹¹ In addition, bi-annual reporting informs the relevant departments of the status of tCMS program elements.

¹² These measures are generally intended to reach those suppliers which Daimler has a contractual relationship with and which directly provide to Daimler Emission-related software, Emission-related software calibrations,

an effective technical compliance management system. Daimler's tCMS (and the broader CMS) include key measures to mitigate the risk of misconduct by suppliers. Daimler has implemented and continues to enhance its business partner integrity management, *see* Section III.F., for technical compliance.

First, the Company systematically screens all of its suppliers on an annual basis. In addition to existing screening for criminal or environmental violations, in 2019, Daimler enhanced its screening process to identify suppliers that have potentially violated other regulatory requirements. Additionally, as of 2019, Daimler's Chief Compliance Officer participates in its Procurement Council (the Company's top management procurement business meeting) to further emphasize the importance of compliance in the procurement processes and organization.

In addition, Daimler typically furnishes suppliers with specification books, which provide a technical description of the parts, software, or service requested. In 2018, the Company added additional tCMS documentation requirements to its standard specification book, which contractually require the supplier to provide specific documentation regarding parts, software, and services, relating to regulatory conformity. Daimler can then use this documentation to create robust disclosures to relevant authorities.

The Company also includes standard terms and conditions in every business partner contract; these include general requirements of compliance with laws and regulations. In 2020, Daimler will enhance the general terms and conditions in its supplier contracts to include an explicit requirement to comply with technical regulations and laws, which include laws and regulations governing vehicle emissions and certification., and will undertake reasonable best efforts to include the requirement to comply with technical regulations into contracts entered into with suppliers. Daimler is also undertaking reasonable best efforts to include requirements in its suppliers' contracts, as well as in its suppliers' contracts with their own suppliers, to document or notify Daimler or Daimler's direct supplier in writing when the supplier determines that the supply of an Emission-Related part or performance of an Emission-Related service will result in Daimler violating U.S. or California vehicle emissions or certification regulations or laws, except where deficiencies under 13 C.C.R. §§ 1968.2 or 1968.5 may be permitted with appropriate disclosure to EPA or CARB. Daimler will also establish and maintain a list of suppliers that provide such parts or services that, to Daimler's knowledge, result in Daimler violating U.S. or California vehicle emissions or certification regulations or laws, except where deficiencies are permitted with appropriate disclosure to EPA or CARB. Daimler will also include on such a list suppliers that have been found by a governmental environmental agency to have violated U.S. or California vehicle emissions or certification regulations or laws in an administrative agreement, consent decree, settlement agreement, or other formal judgment or adjudication. This list will identify both the supplier and the individual Emission-Related part or service which resulted in the violation.

or Emission-related hardware parts for use in vehicles intended for certification in the United States or California.

Relevant suppliers receive the Daimler-issued CAM, which contains information on several compliance topics, including Daimler’s vision of technical compliance and an overview of tCMS, as well as its BPO. The CAM is available 24/7 via Daimler’s Supplier Portal. In 2019, Daimler implemented an automatic CAM invitation process for every new supplier. The CAM currently appears in English, Spanish, and German. In 2019, Daimler began providing the CAM in additional languages.

In addition to providing the CAM, Daimler identifies suppliers of parts or services to “High-risk” departments (according to the tCMS Risk Assessment) and provides to those suppliers an additional specific tCMS awareness presentation. This presentation details Daimler’s expectations regarding technical compliance and offers contact options for questions or concerns regarding technical compliance. Daimler has provided this presentation to twenty-five of twenty-five identified suppliers. Daimler has also conducted extensive, ongoing face-to-face working sessions with key suppliers regarding technical compliance.

In 2019, Daimler conducted an in-person workshop with key suppliers that provide products or services directly relating to compliance with U.S. or California emissions laws and regulations. This workshop detailed Daimler’s expectations regarding technical compliance. In 2020, Daimler will establish compliance-related communications and escalation processes with key suppliers that provide products or services directly relating to compliance with U.S. or California emissions laws and regulations, and will develop and provide a platform and guidance for these suppliers to evaluate their own technical compliance systems and emission-related development processes. Finally, beginning in 2019, Daimler developed and began providing specific web-based training on U.S. emissions regulations to key suppliers that provide products or services directly relating to compliance with U.S. emissions laws and regulations.

V. Technical Compliance and Certification Control Measures

Based on the control objectives discussed in Section IV.C.3., Daimler has developed technical compliance and certification control measures, which both prevent and detect undisclosed AECDs and defeat devices, and ensure that AECDs are properly disclosed and tracked. This Section outlines these control measures, focusing first on those measures aimed at better understanding and communicating certification requirements, which influence development, certification, and lifecycle management. Then, this Section discusses measures designed specifically for each of these three stages.

A. Communicating and Understanding Regulatory Requirements

1. Regulatory Monitoring Meeting

Daimler holds quarterly, cross-functional Regulatory Monitoring Meetings for the purpose of aggregating news on emerging regulations and providing one consolidated source of information that is distributed on a management level within R&D. If questions regarding how to interpret or approach a rule, regulation, or situation are raised, Certification initiates steps for clarification, which include forwarding the question to the TCC, consulting with IL or, even, where necessary, consulting with regulatory authorities. This process allows for a systematic screening, consolidation, and communication of relevant information.

In the fourth quarter of 2018, Daimler held initial pilot-level Regulatory Monitoring Meetings. Since then, the Company has continued to evaluate the structure of Regulatory Monitoring Meetings to enhance their efficacy, and it is implementing an IT-platform to support them further. Formal launch of regularly scheduled Regulatory Monitoring Meetings occurred in the fourth quarter of 2019.

Information regarding new or revised regulations or regulatory guidance is distributed via the Regulatory Monitoring Meeting platform to R&D, which thus centralizes new regulatory information in one location.

2. Enhanced Regulatory Database

Daimler employs databases to consolidate and communicate automotive regulatory requirements. First, it collects and publishes regulatory requirements in a Daimler-maintained database, Automotive Legislation Online (“ALO”), which is available both internally and to external subscribers (*e.g.*, other OEMs and suppliers) through a website on the Daimler network. Updates are based on continuous regulatory screening by Certification and information from the relevant markets, and are communicated to internal and external customers through notifications and newsletters. Furthermore, Certification and R&D maintain an internal database that provides supplemental information on regulatory requirements, including summarized extracts of regulations focusing on technical aspects.

In the future, Daimler will implement a next generation regulatory database (the “Enhanced Regulatory Database”), which will consolidate the aforementioned databases along with regulatory requirements, supplemental information, internal engineering guidelines (TCC/EPB decisions), and regulatory authority guidance. It will also provide improved navigability and ease of access for engineers (*e.g.*, via improved topic-related tagging). Certification, which will oversee the content and management of this database, will add new information on a rolling basis; this may include developments from the Regulatory Monitoring Meetings. Daimler has initiated conceptual design and implementation of this database. Full implementation is planned to occur in 2021.

B. Controls on the Development Process

Daimler has implemented the following measures related to the software development process to help ensure compliance with regulatory requirements and internal Daimler standards.

1. Systematic Derivation of Technical Specifications

Daimler will establish an enhanced process for systematically deriving technical specifications from regulatory requirements for product compliance. The systematic derivation of technical specifications is intended to take the regulatory requirements for vehicle emissions and certification compliance and turn them into parameters or limits for engine or aftertreatment performance, which are then applied to the design of software. This derivation of technical specifications will be a mandatory step in the development of light- and medium-duty powertrains.

2. Software Compliance Guide

The Software Compliance Guide, attached hereto as Attachment D, provides overarching themes and guardrails for the development process, and reiterates Daimler's fundamental integrity and compliance principles. Developed jointly by legal and R&D experts, the Guide focuses on technical compliance topics (including emissions and fuel economy regulations). The goal is to familiarize developers with the general legal and internal standards that govern the design of a specific function before functional development begins. Developers also use the Guide as a reference tool when reviewing a proposed software change.

The Software Compliance Guide contains guidance on five dimensions: information security, product safety, environmental compliance, intellectual property, and product conformity. With respect to environmental compliance, Daimler has issued guidelines for the topics of emissions, OBD, fuel economy/CO₂, and noise. Guidelines for emission-relevant software functions state:

- Software functions of emission-relevant vehicle systems must be designed in such a way that they ensure the protection of health and the environment.
- Software functions must meet legal requirements for emissions without causing other mandatory requirements (*e.g.*, such as OBD or noise emissions) not to be met. This must be ensured, even if it is at the expense of comfort or performance requirements.
- Software functions must be designed to be independent of test cycles and the dynamometer and no direct or indirect detection of test boundary condition must be made.
- Software functions must be developed and designed based on physics.
- Software functions must be designed in such a way that counters, timers (*e.g.*, time after engine start), integrated parameters, memory elements or other parameters with potential test cycle relevance are only used for absolutely necessary and justifiable changes in system behavior—if necessary, consult certification and technical compliance departments before application.
- Software functions must, as far as technically possible, be reversible with regard to activation and deactivation conditions, so that, for example, switching back and forth between different operating modes is ensured.
- Software functions must be designed in such a way that the effects of the measures are physically reasonable and justifiable.
- Certification-relevant documents must be correct, clear and complete, and adhere to all legal requirements.

- Possible effects of software changes on certification-relevant documentation are to be considered and adjustments in the corresponding documents are to be made and coordinated with Certification in the run-up to the software implementation.
- Software functions, including their calibration, must be logically comprehensible to a third-party expert.
- For software functions for which admissibility is justified on the basis of their occurrence in legally prescribed test procedures, evidence must be available in the form of test data or engineering justifications.

The Software Compliance Guide supplements training and provides practical orientation for actual day-to-day application. Developers may use this Guide at the earliest stages of software development, and throughout, to determine whether a function under consideration complies with the guidelines outlined. It also informs the decisions of Functional Group Leaders, *see* Section V.B.4.

The Software Compliance Guide was finalized and distributed to R&D employees in the first quarter of 2019. Each year Daimler will update the Guide as necessary based on feedback from software developers and compliance experts, as well as decisions by the TCC/EPB and feedback from regulatory authorities. The Company has assigned responsibility for updating various chapters in the Guide to experts (most of whom are in R&D) who will proactively integrate other expert and authority feedback. Daimler will provide the Software Compliance Guide to R&D employees on an annual basis. The Software Compliance Guide will continue to require that all software not detect or respond in any way to United States or California test cycles or test cycle parameters and that all software be designed independent from any such regulatory test cycles and test cycle parameters.

The Software Compliance Guide includes contact person information. Therefore, if an engineer has questions regarding how to implement the Guide, or whether a function complies with the Guide, he or she is able to reach out directly to that contact person for guidance.

3. Identification and Tracking of Disclosure-Relevant Control Parameters

Daimler will implement a process to identify and track all disclosure-relevant control parameters (*e.g.*, EGR rate) to ensure that any changes that materially affect such control parameters are reflected in revised or updated AECD disclosure documents as required by U.S. and California AECD disclosure laws, regulations, and guidance. The Company will maintain an inventory of these control parameters and will continuously revise and update this list.

This process will help ensure that developers consider the purpose and justification of disclosure-relevant functions early in the development process, before AECD documentation is generated. It will also ensure that these disclosure-relevant control parameters are consistently documented and tracked.

4. Compliance Check by Functional Group Leaders

Daimler established the new role of Functional Group Leader and is in the process of implementing a tool-supported compliance check by Functional Group Leaders to assist with ensuring that software changes and proposed new functions developed within Daimler meet compliance standards. The powertrain department within R&D divides and groups together software functions into Functional Groups, which it then assigns to a Functional Group Leader. The Functional Group Leaders are “mentors”—experienced engineers with expertise around certain functions—who serve as an expert contact for questions, assist with data checks, and confirm compliance of functionalities. Functional Group Leaders largely exist outside of regular reporting lines, so function developers do not generally report to their Functional Group Leader. Daimler chose this structure to facilitate frank and candid discussions of challenging engineering concepts and allow for technical review by an engineer with in-depth knowledge. There are currently approximately 230 Functional Group Leaders identified in the R&D powertrain department.

Functional Group Leaders review proposed changes to software in the software definition phase of a “VA cycle.” Perhaps most importantly, Functional Group Leaders conduct a compliance check for all software change requests and proposed function developments within their Functional Group. The Functional Group Leaders confirm that proposed software changes and new function developments adhere to the Software Compliance Guide. Functional Group Leaders may reject proposed changes/new function developments or send them back to the developer for review. This check confirms that proposed software changes and new function developments are examined by, at a minimum, two engineers.

The Functional Group system safeguards compliance through a formal review process for all software changes and new function developments, provides for early identification of potentially impermissible functions (at the start of every “V cycle” in the software development process, before implementation), and contributes to consistency across projects (*e.g.*, functions used in four-cylinder engines and six-cylinder engines). Establishment of the Functional Group system began in 2019, and will continue to be further established and implemented in 2020 and 2021 to cover ECU, TCU, CPC, and DCU functions in light- and medium-duty vehicles intended for certification in the U.S. or California.

5. Cascaded Software Confirmation and Approval

Proposed software passes through a rigorous testing regime before it is released for industrialization. The approach, which has historically been used by Daimler and throughout the industry, is referred to as the “VA cycle.” The “V” portion of the cycle is the phase in which the software is developed. This includes the creation of the software itself and the implementation of changes into that software. The “A” portion of the cycle is where the software is tested in operation, either on a testing bench or as part of a test drive. Prior to software industrialization (*i.e.*, before the software is implemented in pre-production or production vehicles), cascaded approvals occur for all software and calibration developments. These cascaded approvals require signoff from at least three levels within the Company.

6. Software Screening

a) Screening of Functions for Review

Daimler uses screening processes to analyze software functions, determine whether such functions should be used, and, if necessary, identify justifications for the use of a function—or, alternatively, determine that a function is not justified and therefore cannot be used. This approach—identifying functions that need further review—helps to ensure a consistent, reproducible, and objective evaluation of functions across the standard assessment criteria, and enables clear documentation of the process. If, at the end of this process, there is no acceptable justification for a function, that function is not used in the software.

Daimler used a Manual Funnel Process for the MY17 Sprinter in the U.S. market applying filter criteria developed with outside counsel. This process will be used in the future when necessary on an on-demand, ad hoc basis as a complement to the Tool-Supported Screening Process, which Daimler is currently implementing to improve efficiency. The manual funnel process will be used for the introduction of new platform diesel vehicles to the U.S. market. The Tool-Supported Screening Process will use function-signal combinations (for example, environmental pressure as an input to an aftertreatment SCR dosing function) to identify functions that require further evaluation, creating a risk-based indication of areas warranting further review. The tool contains a range of function-signal combinations that could raise regulatory concerns, and it can scan HEX and A2L files against those combinations to determine if they are present in a software. If the tool detects a function-signal combination that could be of concern, that function is further assessed within R&D using specific criteria. If necessary, the identified function may be submitted as a Clearing Case and assessed as part of the cross-functional decision-making processes.

Through this process, the Company may assess whether a function is a permissible AECD, and may also assess whether to implement the function even if it may be permissible. If a function is identified that may be impermissible, the function can be removed, deactivated, or changed, or the Company may directly request agency guidance regarding implementation of the function. The Tool-Supported Screening Process is used in later stages of software development, when the software is closer to release. This tool is currently under development and has been tested for use on specific engine types. The Tool-Supported Screening Process will be used from March 31, 2021 onward to screen all new U.S. powertrain projects to identify software functions that may qualify as AECDs.

b) Tool-Supported Calibration Check

Daimler also uses a Tool-Supported Calibration Check to identify potential issues with specific software calibrations in light- and medium-duty vehicle ECUs, TCUs, CPCs, and DCUs, as opposed to functions. The Tool-Supported Calibration Check reviews ECU and TCU calibration data to determine if certain functions have calibrations that are outside of a parameter range that is known to be reasonable and permissible. The Tool can also compare calibrations between software versions to isolate changes that were made and can compare calibrations between different engines. This tool will also perform a complete check for any functions previously flagged for additional analysis.

The Tool performs conformity checks by analyzing labels to ensure they fall within certain predefined calibration value ranges, testing for minimum and maximum values and under- or overruns, testing for active and inactive functions, and testing for certain calibration curves.

This Tool is used in the last “V” portion of the “VA cycle,” prior to industrialization. Daimler has used this Tool to check calibrations in diesel engines in the U.S. market since the second quarter of 2018. And it was used to conduct TCU calibration checks for select TCUs in the fourth quarter of 2018. In the first quarter of 2019, Daimler began using the Tool to conduct calibration checks of select gasoline engines. Daimler will continue improving this Tool to cover additional control units and extend its use to gasoline vehicle software. This Tool is being used to screen the calibrations of ECU and TCU software of all gasoline and diesel vehicles intended for certification as light- and medium-duty vehicle models in the United States and to screen ECU- and TCU-relevant software changes (running changes or changes implemented via field measures) to light- and medium-duty diesel vehicle models issued Certificates of Conformity or Executive Orders. Beginning with MY2021, Daimler will use the Tool-Supported Calibration Check to screen the calibrations of DCU and CPC software of all vehicles intended for certification as light- and medium-duty diesel vehicle models in the United States and will use it to screen the calibrations of CPC software of two light- or medium-duty gasoline vehicle models intended for certification in the United States. Beginning with MY2022 Daimler will use the Tool-Supported Calibration Check to screen the calibrations of CPC software of all vehicles intended for certification as light- and medium-duty gasoline vehicle models in the United States. Beginning with MY2022, Daimler will use the Tool-Supported Calibration Check to screen DCU and CPC-relevant software changes (running changes or changes implemented via field measures) to vehicles issued Certificates of Conformity or Executive Orders as light-duty and medium-duty diesel vehicles.

7. Testing and Verification Process

In addition to using the tools and measures set forth above, tCMS R&D may order additional testing, which may include standard or non-standard test cycles, to investigate any potential issues or concerns. When such a test is performed, IL/P, Certification, and tCMS R&D determine what criteria will be acceptable for any specific test result based on the issue or concern that triggered the testing. This is based on the nature of the test and the nature of the inquiry. A test that shows that a vehicle is out of compliance with a mandated standard is never acceptable. Once testing concludes, tCMS R&D, Certification, and any relevant functional departments meet to discuss the results. This meeting determines whether the software being tested is in compliance with regulatory and internal standards and whether to conduct any additional follow-up or clarification. Next, Certification and tCMS R&D verify the test results. This includes a review of the aggregated test results and the conclusions reached in the aforementioned prior meeting with the functional department leaders. A second review then takes place. This review involves representatives from IL and can include an additional detailed review of the results and data, if appropriate. Finally, representatives from IL/P, Certification, and tCMS R&D conduct a discussion workshop. This group reaches the ultimate decision about how to proceed. Feedback is provided to R&D for enhanced software development.

This on-demand testing and verification process occurs after industrialization and may occur throughout the vehicle lifetime.

C. Controls on the Certification Process

Controls on the certification process also work to identify possible undisclosed AECDs, or even defeat devices, and safeguard the accuracy of submissions to regulatory authorities.

1. Off-Cycle Testing

Currently, Daimler conducts off-cycle testing, encompassing both PEMS and dynamometer testing, to demonstrate off-cycle tailpipe emissions and screen for undisclosed AECDs and defeat devices in U.S. light- and medium-duty diesel vehicles. This testing began in MY2017 for medium-duty diesel vehicles (Sprinter) and continues to be applied for new diesel vehicle certifications. The purpose of the off-cycle testing described here is to screen for defeat devices or undisclosed AECDs. Daimler will continue to conduct the PEMS and off-cycle dynamometer testing reported in Appendix A to the MY2017 OM642 Sprinter AECD documentation for new light- or medium-duty diesel vehicles issued Certificates of Conformity or Executive Orders, through and including MY2023.

Daimler also conducted PEMS testing to demonstrate off-cycle tailpipe emissions and screen for undisclosed AECDs or defeat devices on three vehicles certified as light- or medium-duty gasoline Test Groups per Model Year for MY2021, and will conduct this testing through and including MY2024, generally selected based on sales volume. Daimler has and will continue to submit the PEMS testing emissions data to the certification departments at EPA and CARB and will publicly post PEMS reports. This testing is conducted by a team located in Los Angeles, California, independent from R&D. Certification organizes and facilitates this testing process and also reviews the test results.

2. Emission-Related Parts List

Based on the regulatory definition of “emission-related part” and associated regulatory guidance, Daimler maintains a list of emission-related parts in light- and medium-duty vehicles. The emission-related parts list is used to ensure complete certification reporting, including satisfying the requirements of the Common Application and other reporting obligations, such as the requirement to report running changes.

Certification and R&D currently review and update the list on an ad hoc basis, such as in response to technology updates or regulatory developments. In MY2019, Daimler began to benchmark best practices by reviewing parts lists in the warranty booklets of other industry peers. This comparison showed that Daimler’s parts lists generally conform to its peers’ parts lists.

Daimler conducts an annual review to ensure that the parts list complies with applicable regulatory guidelines, while incorporating technological developments in order to maintain a comprehensive parts list. Daimler will continue to conduct this annual review and update. Daimler will add parts based on technological advances (*e.g.*, EVs); assess whether non-powertrain controllers should be added to the scope (*e.g.*, HVAC, battery); and expand the

criteria for inclusion to include parts related to off-cycle GHG credits. In evaluating potential updates, Certification will also consider, among other things, OBD relevance, GHG off-cycle credit relevance, and benchmarking of industry best practices by reviewing the parts lists that are found in the warranty booklets of its peers.

3. AECD Documentation, Approval, and Review

The process for developing AECD disclosures for any particular test group is iterative and seeks to identify all potential AECD functions and disclose such functions consistent with regulatory requirements and internal standards. R&D and Certification execute this process, with oversight and involvement from IL.

Specifically, Certification provides the AECD disclosure document format to R&D, which then provides a first-draft AECD disclosure using the provided template. Certification reviews this draft and provides feedback (due diligence questions and clarifying edits) concerning all outstanding issues for the particular AECD disclosure draft. R&D implements these revisions, and this process repeats as necessary, with question-and-answer exchanges throughout. At the end, Certification issues a draft to IL for consultation and evaluation. At that point, IL, in collaboration with external legal experts when necessary, also provides its due diligence questions and clarifying edits concerning all outstanding issues with the particular document; IL engages in a similar iterative process with Certification and R&D. Once all pending questions are closed, Certification prepares the final disclosure document, which then is provided to R&D for signoff.

To “sign off” on the AECD disclosure document, the department and development groups involved in the creation of the relevant functions must diligently review their respective sections again and confirm the following in their respective areas of the software: 1) the disclosure complies with the relevant regulatory provisions and is complete, accurate, and not misleading; and 2) to the best of the reviewer’s knowledge following a due diligence inquiry, there are no indications of a) defeat devices or undisclosed AECDs or b) efforts to manipulate functions, data points/parameters, or relevant tests and corresponding explanations in such a way that they are represented to the regulatory authorities incorrectly or misleadingly. Making the employees responsible for relevant functions certify their full and accurate disclosure helps to ensure true and complete AECD documentation. This also offers a final opportunity for management review. Once the subcertification process is complete, Certification uploads the final document to EPA and CARB via Verify and DMS, respectively.

In addition to the process used above to check the accuracy and completeness of AECD documentation, Certification also has the ability to request on-demand, ad hoc checks for technical and legal correctness, thereby providing additional assurance regarding disclosures where there is a question about a particular vehicle or technology. When this step is taken, IL/P and tCMS R&D will independently review AECD disclosures prepared under the process described above and, as needed, evaluate functions and calibrations underlying disclosed AECDs. This process was used for MY2017 OM642 Sprinter AECD disclosure documentation as well as for the proposed GLK update.

Finally, Certification has implemented a process whereby it checks ECU datasets to ensure that calibration values match the values disclosed in AECD documentation for both gasoline and diesel vehicles. This serves as an independent verification of the documented calibration values. Certification selected a MY2020 gasoline test group as the pilot for this additional accuracy check and implemented the use of this check in MY2021.

D. Lifecycle Management Control

In addition to the development and certification control measures listed above, Daimler has implemented lifecycle management control measures to help ensure that changes made to the vehicle certified configuration are properly tracked and disclosed to regulatory authorities.

1. Tracking and Recording of Certified Configuration

Tracking and recording of the certified configuration, i.e., the hardware and emission-related software configuration of the Emissions Data Vehicle (“EDV”) (as tested for compliance with U.S. emissions standards), helps ensure that any changes to the certified configuration are duly captured. The process begins when a vehicle is designated as an EDV by Certification. Once Certification constitutes a test group, R&D suggests the applicable EDV for the test group, and upon confirmation from Certification, R&D then provides tire data, weights, and worst-case drive mode to Certification. Furthermore, R&D provides a part number checklist for emissions relevant hard- and software. Based on that information, Certification orders the workshop to check the hardware and software parts to ensure that the physical test vehicle is configured as intended prior to initiating a software freeze, which occurs before mileage accumulation. Subsequent to the freeze, any proposed hardware or software changes to the certified configuration must be approved by Certification and reported through the running change reporting process to EPA and CARB.

Daimler developed additional safeguards that are being implemented with MY2021: Certification will retain certified software configurations in a centralized database and a window sticker will designate vehicles used for certification testing, which will help to prevent any changes to the certified configuration of that vehicle.

2. Software Change Process

Daimler has implemented a software change process to ensure that software changes to emission-relevant ECUs in vehicles issued Certificates of Conformity or Executive Orders are catalogued and reported to the agencies. Certification has a veto right for any proposed software changes to ECU, TCU, DCU, and CPC software. That is, once a vehicle is in production, any proposed software change to these control units requires explicit approval from Certification, which also is in charge of notifying regulatory authorities of such changes as required by the regulations.

The process begins when a developer requests a software change. A cross-functional review team reviews the corresponding change request form for regulatory conformity and plausibility. The software change, depending on the content, may be challenged by Certification with additional requests for evidence and details. In addition to the above plausibility check, in some cases, Certification conducts a further detailed analysis on randomly selected change

requests to ensure that the contents of the change (through a comparison of the datasets before and after the change) are reflected in the description of the requested change. Implementation of this dataset check is ramping up; it has been implemented for 100% of all proposed software changes to ECUs, TCUs (NAG3, 7-DCT, and 8-DCT), DCUs, and CPCs in light-duty vehicles issued Certificates of Conformity or Executive Orders, and will be conducted on proposed software changes to ECUs, TCUs (NAG3, 7-DCT, and 8-DCT), DCUs, and CPCs in medium-duty vehicles issued Certificates of Conformity or Executive Orders by the end of 2020.

If Certification has concerns about a proposed change, it can ask R&D to provide further detail for clarification. If Certification has concerns with the rationale or explanation provided by R&D, it can veto any proposed changes. This process creates transparency by ensuring traceability of proposed changes, and accountability on behalf of Certification and the developers who are proposing the changes. This is yet another instance of Daimler's four-eyes principle, increasing the number of responsible employees who critically examine and challenge proposed software changes.

3. Field Software Control

Daimler will continue to enhance its lifecycle management controls to ensure only approved and certified software exists on vehicles in production and in the field. To this end, the Company will enhance its product documentation to allow for direct identification of software and functions that have been implemented on a vehicle-by-vehicle basis. In 2019, Daimler began conducting sample checks of the software configurations of three vehicles certified as light- or medium-duty gasoline models in the field in the United States to determine whether such software configurations are consistent with each vehicle's certified configuration and confirm that any changes to the certified configuration were made in accordance with regulatory requirements. Beginning with MY2020, Daimler will randomly select and conduct sample checks of vehicle software in the field in the United States to determine whether such software configurations are consistent with each vehicle's certified configuration as reported to EPA and CARB, and to confirm that any changes to the certified configuration were made in accordance with United States and California regulatory requirements.

VI. Internal Audit (Corporate Audit)

Daimler uses the classic "three lines of defense" model for corporate risk mitigation. This model is comprised of the following elements: 1) relevant management; 2) the various risk control and compliance oversight functions established by management; and 3) independent assurance. At Daimler, Corporate Audit ("CA") constitutes this independent third line. CA provides Daimler's Supervisory Board and senior management with comprehensive assurance, rooted in the highest level of independence and objectivity possible for an internal function.

Independence, including organizational independence, flows from direct and unrestricted access to senior management and the Supervisory Board. That is reflected in the Chief Audit Executive's ("CAE") reporting lines to members of the Board of Management and the Audit Committee of the Supervisory Board. Furthermore, this fundamental reporting principle is perpetuated throughout all hierarchical levels in CA, preventing the CA organization from being

subject to external influence on all levels. The Audit Committee ultimately approves CA's annual budget, which CA develops.

The Corporate Audit Charter, attached hereto as Attachment E, signed by the Chairman of the BoM, the BoM member for IL, and the CAE, stipulates the authority of CA to conduct audits by comprising all necessary and relevant fundamental prerequisites for a professional audit function. These fundamental prerequisites for a professional audit function comprise of independence, objectivity, avoiding potential conflicts of interests, unrestricted authority to access all relevant information, and unrestricted resources. A measure set to ensure/enforce compliance with the fundamental prerequisites constitutes the comprehensive audit standards and single measures such as engagement training to perform audits without any quality compromises, reporting of any foreseeable potential conflict of interest to CA management, a one-year cooling-off period for new auditors, a professional on- and off-boarding process, regular training on audit ethics and compliance, and avoiding any operational duties.

The CA Charter grants CA the authority to access all relevant corporate information, thereby giving CA unrestricted access to all Daimler functions, records, property, IT systems and personnel. In addition, the CA Charter gives CA the untrammelled ability and authority to independently allocate resources, set review frequencies, select subjects for upcoming audits or investigations, determine scope of work, and apply the techniques necessary to accomplish its audit objectives, *e.g.*, conduct detailed analysis directly in IT systems with auditor access or perform interviews with relevant personnel. Importantly, these rights apply fully to all majority-owned Daimler entities (and extend to other entities/parties on a contractual basis).

A. Corporate Audit's Role

CA's assurance activities safeguard corporate assets, support the mitigation of Daimler's compliance risk exposure, and assess internal controls and processes with respect to compliance with applicable laws and regulations, as well as internal and external policies and guidelines. To accomplish these goals, CA employs a systematic, disciplined approach to evaluating and improving the design, effectiveness, and efficiency of all applicable corporate processes in the Company's businesses. CA develops and presents an annual audit plan in advance each year to the BoM and the Audit Committee of the Supervisory Board. During the course of the year, CA updates the BoM and the Audit Committee on its work regularly.

Leveraging a sophisticated and detailed annual risk assessment process, the annual audit plan takes into account various information sources, in particular risks and control concerns raised by Daimler's management in risk assessment interviews. CA reserves the right to reprioritize work and conduct ad hoc reviews if urgent, high-risk topics emerge during the course of the year. The audit plan regularly reflects technical and environmental compliance issues like emissions certification and homologation processes and parts/system/software-release processes.

CA staff is made up of a variety of interdisciplinary teams of comprehensively trained and highly qualified professionals. The composition of each team is conducted with consideration of the specific audit topic to ensure the appropriate specialists are allocated.

Employing its standard audit approach, CA prepares a comprehensive report for each audit conducted, including findings and corrective measures, along with clear responsibilities and deadlines for each corrective measure. CA tracks the implementation of corrective measures. It also regularly performs follow-up audits for issues identified in process audits and special reviews to verify the effective implementation of corrective measures. Clear management responsibilities for remediation helps ensure their execution and management commitment. Audit findings to which CA in its sole discretion assigns higher risk ratings, based on Daimler's standard methodology, receive more senior management attention—risks classified as “High” require implementation confirmation from an E1; “Medium” require at least E3 confirmation or higher. Of course, CA retains the right to escalate any issue to the BoM or Supervisory Board, at its discretion.

B. Post Settlement Audit Team (“PSAT”)

CA already audits technical compliance processes and topics. These activities consider the general audit standard IDW PS 980 and other relevant standards, by examining tCMS's structure, implementation, and effectiveness, and is adopted considering new process developments. The relevant categories include compliance culture, objectives, risks, program, communication, monitoring, and improvement. Drawing upon its auditors who have experience with technical R&D topics as well as in-depth knowledge of Daimler's R&D processes, CA validates the design and effective implementation of relevant technical processes.

Pursuant to Paragraph 32 of the Consent decree, CA will continue to monitor the successful implementation and operation of tCMS through audits conducted by the PSAT. In particular, the Audit Plans in total will be designed to provide an overall assessment of the tCMS's design and implementation status, as well as the effectiveness of relevant tCMS processes in the respective operational business areas. Audits related to the effectiveness of relevant tCMS processes will include, but not be limited to, controls related to the following technical focus areas:

- The software development process, focusing on R&D powertrain, covering the software development and implementation process from the design phase to release.
- The implementation and effectiveness of global emissions certification processes.
- Product-related interfaces to identify certification-relevant risks, including examination of product-related components and their interfaces with other systems, considering areas where this interaction could impact certification.

All audits will be conducted based on approved Audit Plans and according to CA's standard audit procedures. Every audit will start with an audit notification to the relevant management. Then, a request for information will be submitted to the relevant business segment prior to the start of the on-site fieldwork phase. The response to the information request is used for preparation of the audit fieldwork and to refine the scope of the audit; this refined scope is reflected in an audit work program. The audit work program will include the audit objectives, procedures, anticipated underlying risks, and reference to relevant policies, guidelines, or

standards to be considered in assessing the controls in scope. During the audit fieldwork phase, auditors will, among other activities, review relevant documents and process materials, perform interviews, conduct detailed analyses, and conduct sample testing. Any potential issue identified during fieldwork will be documented and transparently discussed with relevant management. All issues identified will appear in a comprehensive audit report. The audit report is issued after a comprehensive review of the audit documentations and the report itself, following a recognized and certified standard audit approach.

C. CA Resources Dedicated to tCMS

To carry out these audit activities, CA draws resources from a large, robust pool of skilled professionals and will dedicate these resources as required. As described in Paragraph 32 of the Consent Decree a dedicated PSAT will be established.

The PSAT will consist of experienced professionals¹³ with deep technical expertise, a strong scientific educational background with focus on mechanical and electrical engineering as well as related fields of expertise, extensive experience in conducting second-line/compliance process-related audits, and a detailed understanding of Daimler technical processes and products. Their experience includes working with Daimler R&D personnel and evaluating the Company's R&D processes, certification activities, and software development. These resources include two Senior Managers as audit team leads with longstanding relevant work experience, comprehensive audit experience, and special expertise and knowledge in fields like certification, regulatory affairs, and quality management. The PSAT will be led by an E2-level team leader.

In addition, the PSAT may utilize case-specific internal technical experts and external technical consultants as necessary to complete its work effectively.

VII. Third-Party Review

In June 2018, the BoM decided to retain a "Big Four" auditor to conduct an external evaluation of Daimler's CMS for anti-corruption and technical compliance pursuant to a German assurance standard for compliance management systems. For technical compliance, Daimler is one of the first major German enterprises to initiate such an external evaluation. The evaluation will assess the design, implementation, and operating effectiveness of CMS and tCMS and identify areas for potential enhancement at all levels of the Company. Daimler is fully committed to implementing any proposed enhancements. The Compliance Board will adopt recommendations or lessons learned to further enhance its compliance programs.

The anti-corruption evaluation started in October 2018 and was successfully completed in 2019; the technical compliance evaluation, which focuses in particular on emissions and certification, began in the first quarter of 2019. The tCMS evaluation is projected to be completed in 2020.

¹³ This dedicated team will include the existing R&D audit department with its extensive experience auditing technical R&D topics.

VIII. External Communication of Compliance Efforts

Daimler regularly communicates its compliance activities using various channels, including its Annual Report, the Sustainability Report, and the Daimler website. Over the past ten years, the Daimler Sustainability Dialogue has served as an effective platform for constructive discussions between Daimler and stakeholders, from the political and scientific communities to society as a whole. Given the new opportunities and challenges facing the automotive industry, this discussion is more important today than ever before. Furthermore, E1- and E2-level managers participate in several compliance-focused initiatives, including the UN Expert Group Meeting regarding Whistleblowing and the German Forum Compliance & Integrity (NGO).

By the end of the second quarter of 2020, Daimler intends to expand its external compliance communication efforts, including by providing a more detailed description of its compliance activities on its website. It also addressed technical and environmental compliance as a key topic at the November 21, 2019 Daimler Sustainability Dialogue, which was hosted by BoM members.

IX. Implementation and Monitoring Office

Daimler has established a dedicated Implementation and Monitoring Office within IL to support and track the implementation of the compliance measures and initiatives included in this Compliance Operating Plan and Section VII of the Consent Decree.

ATTACHMENT A

DAIMLER

Communication plan: Communication Measures Technical Compliance &
Technical Integrity @RD 2020

COM/C



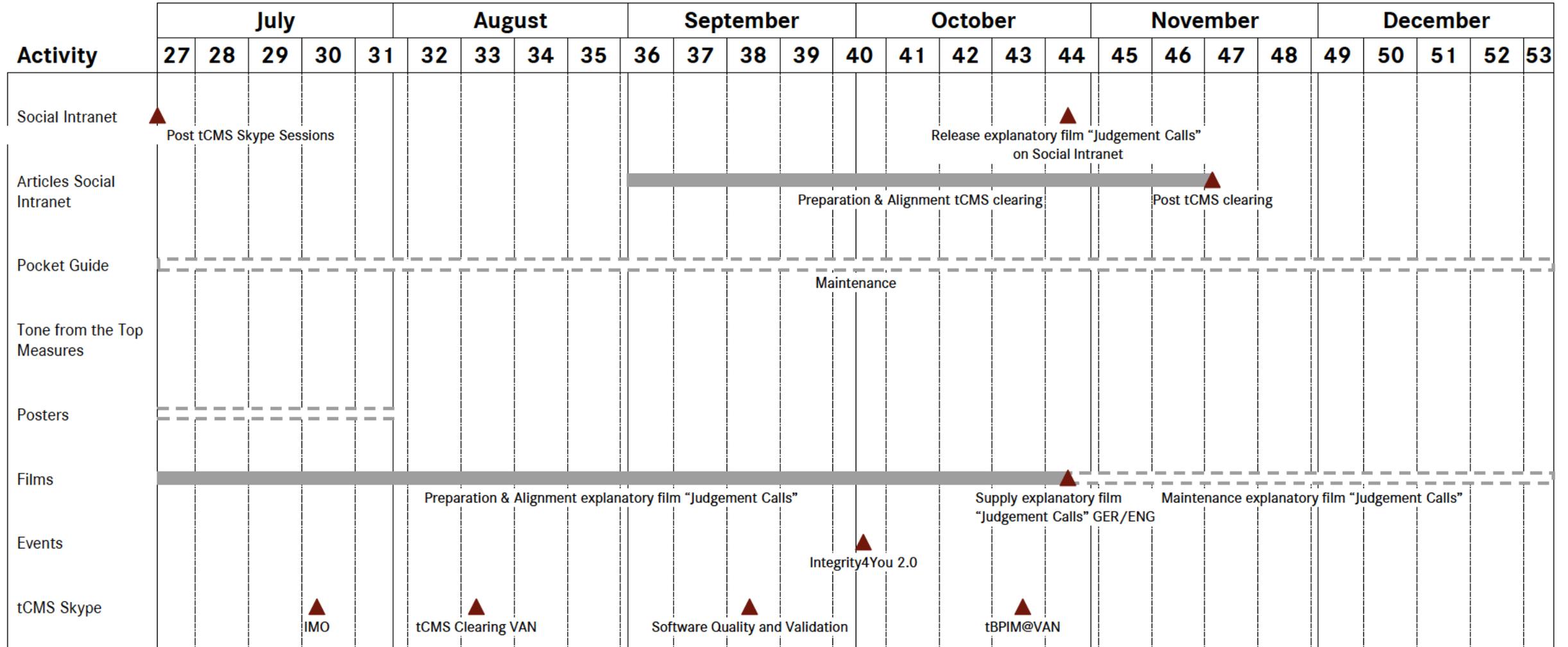
DAIMLER

Communication plan: Communication Measures Technical Compliance &
Technical Integrity @VAN 2020

COM/C



Communication plan tCMS and TINT@VAN – 2nd half year 2020*



ATTACHMENT B

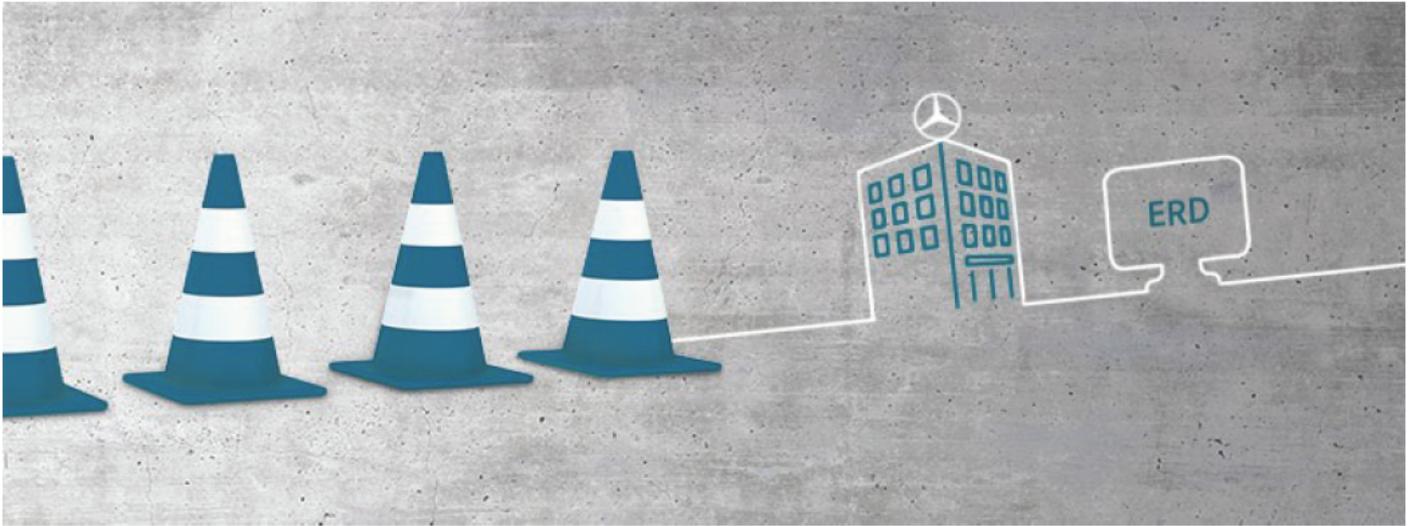
Treatment of Violations Policy A 31.4

Contact Person

NAMES REDACTED

Policy Owner

NAMES REDACTED



Purpose of Policy / Management Summary

The Policy specifies the BPO process and the responsibilities of the parties involved in the BPO procedure. In addition, the Policy sets measures according to which violations are evaluated and the consequences determined.

Changes to Previous Version

04/2018: Polish language version added

03/2018

- Adjustment of BPO responsibility and BPO process
- Distinction between rule violations in such with a major risk and such with a minor risk for the company and its employees
- Specification and addition of case categories
- Introduction of a risk-based initial review by the BPO
- Duty to report focused on cases with major risk
- Risk as decisive factor for the company
- No longer doubled information of affected employees
- Exceptions of the obligation to investigate in case the company has no interest in investigating the allegations or punishing the offender
- Suspension of limitation periods
- Clear description of the role of the Neutral Intermediary

Treatment of Violations Policy A 31.4

Action Requirement

For members of managing bodies of Framework Light companies

This is an indispensable policy. Your company falls within the scope of application of this policy. Please enact this policy immediately.

Scope of application

This policy applies to all employees and members of managing bodies of Daimler AG and of all controlled Group companies.

Period of Validity of this Version

3/8/2018 - 3/7/2023

Last Revision of this Version

4/12/2018

Topic

Integrity & Compliance (Disciplinary Measures)

Approval

NAMES REDACTED

7/24/2017

Documentation

Published in the Enterprise Regulations Database (ERD) in the Daimler Employee Portal at 4/12/2018.

Mandatory documents

Policy Documents

Treatment of Violations Policy: 10 Pages

Communication document: 8 Pages

Further Applicable Regulations

- [KBV 3.2 Hinweisgebersystem BPO und Umgang mit Regelverstößen](#)
- [C 169.1 Investigation Policy](#)
- [Specification of the Treatment of Violations Policy \(further clarification and addition of local legal provisions\)](#)
- [KBV 1118.2 Rechte und Pflichten bei unternehmensinternen Untersuchungen im Zusammenhang mit Regelverstößen](#)
- [SAR 1.1 SAR Hinweisgebersystem BPO, Neutraler Mittler und Umgang mit Regelverstößen](#)
- For Germany only:

1 Principles

The company places trust in all its employees and expects them to uphold the principles and guidance of the Integrity Code when acting on behalf of the Daimler Group, to be guided by ethical values, to treat each other and business partners fairly, to follow the law and Daimler Group rules, and to fulfill their duties under their employment agreements. The Daimler Group expects its managers to act as role models for the staff in all the above areas.

In its Integrity Code, the Daimler Group, in cooperation with its staff, has defined the type of conduct expected within the company. This conduct is further detailed in additional policies and instructions.

Mistakes provide an opportunity to learn for the future. For that reason, they must be identified, openly addressed and remedied.

Violations, particularly against laws and the Integrity Code, will not be tolerated. Appropriate disciplinary measures will be taken. If necessary, law enforcement authorities will be notified. All employees shall be treated fairly during investigation of violations. Under employment law, violations are assessed in accordance with the principle of proportionality, taking into account the severity of the violation of duty as well as the employee's past service, his or her responsibility within the company and the circumstances of the case.

The Whistleblower System, Business Practices Office (BPO), and the position of Neutral Intermediary for Germany were created as independent institutions to enable protected reporting of violations of regulations. As a special form of protection, whistleblowers in Germany can contact the Neutral Intermediary, who receives tip-offs and forwards them to the BPO in anonymous form. The BPO classifies whistleblower reports according to the risk posed. It ensures that reported misconduct is effectively investigated and takes steps to remedy identified risks.

2 BPO Whistleblower System and Neutral Intermediary

2.1 Types of Violations

Violations, particularly violations of legal or the Group's internal regulations, are divided into those that pose a major risk and those that pose a minor risk to the company and its employees.

In particular, violations posing a serious risk to the company include the following:

- Corruption, antitrust and money laundering offenses
- Theft, fraud and undue enrichment offenses of significant scope or amount (over €100,000)
- Severe injury to physical or mental well-being
- Severe cases of sexual harassment, discrimination and racism
- Criminal violations of data protection rules
- Accounting and bookkeeping violations with a significant impact that can be detected externally
- Serious violations in connection with engineering specifications and/or technical safety
- Violations of human rights (e.g. violating the principles of the UN Global Compact)
- Severe violations in connection with environmental regulations
- Export control or sanctions violations
- Severe violations of the integrity of the whistleblower system, for example, severe violation of whistleblower anonymity or reporting obligations under Section 2.2
- Other major risks, e.g. violations causing the company to suffer significant losses (over €100,000)
- Violations that are likely to do severe harm to the company's reputation
- Severe violations of the Group's internal agreements to the disadvantage of employees

2.2 Reporting of Violations

Anyone who encounters or learns of concrete, factual evidence of a possible violation of legal or the Group's internal regulations should report them. The proper authorities for reporting violations posing a major risk are the BPO and Neutral Intermediary. Violations that pose a minor risk should be reported to the employee's direct supervisor or the appropriate unit, for example, Human Resources, Corporate Security or Corporate Data Protection.

If there is evidence of violations that pose a major risk, managers are obligated to report it to the BPO or Neutral Intermediary. If the evidence points to a violation that poses a minor risk, managers should report it to the appropriate unit, for example, Human Resources, Corporate Security or Corporate Data Protection, provided the manager is unable to investigate and correct the misconduct independently.

If there are extensive, ongoing internal investigations, the member of the Board of Management in charge of the Integrity and Legal Affairs Division and Chief Compliance Officer can give their approval to grant exceptions to the reporting requirement.

Employees can also contact their employee representatives in accordance with local regulations.

2.3 Responsibility of the BPO and the Neutral Intermediary

2.3.1 BPO

As a rule, the BPO is responsible for suspected violations that pose a major risk to the company and its employees.

The BPO documents the reports it receives and performs an initial review in accordance with the four-eyes principle. The results of the review are also documented.

Any reports received by the BPO of suspected violations posing a minor risk shall be forwarded to the appropriate unit, such as Human Resources, Corporate Security or Corporate Data Protection to be examined for concrete, factual evidence and further investigation. The whistleblower is notified in advance that the report is being forwarded. If the whistleblower does not agree to the forwarding of his or her report, the whistleblower can inform the BPO, stating the reasons why. Taking the reasons given by the whistleblower into account, the BPO examines whether the report nevertheless must be forwarded or if the case can remain within the BPO. If the report is forwarded anyway, the whistleblower can request that the tip-off be sent in anonymous form.

If the suspicions of a violation posing a minor risk are confirmed, the responsible HR unit will decide in consultation with the respective manager whether to take disciplinary action. Once the matter is closed, it must be reported to the BPO. If, during the investigation, evidence of a violation posing a major risk is discovered, the BPO must be notified immediately.

In cases of suspected violations posing a major risk, the BPO examines the facts for concrete evidence, issues a detailed, written investigation order and assigns the case to the appropriate investigative unit (Corporate Audit, Corporate Security, Corporate Data Protection, MB Bank or Legal). If, as part of the order issued by the BPO, local investigative work is to be conducted by central units, the local head of Human Resources is to be notified in advance that an investigation will be conducted. The local head of Human Resources must then notify the local employee representation. Those parties will not be notified if either of them is the subject of the investigation. In this case, a corresponding deputy will be notified. Once the investigations are complete, the investigative unit prepares a report on its findings and forwards it, after internal approval, to the BPO. Afterwards, the BPO makes a decision concerning the outcome of the case and documents it.

If the suspected violation is confirmed, the case is immediately turned over to the Labor Law Unit (HRP/LL).

If the company has no interest in investigating the suspicions or punishing the offender (e.g. because the affected employee has left the company or the statute of limitations has expired), it can refrain from an investigation.

In the absence of concrete, factual evidence, no investigation will be ordered unless additional reports containing concrete factual evidence are received to support the original allegation.

2.3.2 Neutral Intermediary (Germany)

The Neutral Intermediary is an independent attorney who is appointed by the company for Germany and sworn to secrecy vis-à-vis the company. The Neutral Intermediary receives tips regarding regulatory violations from the company's employees, customers or business partners.

After compiling the facts of the case as provided by the whistleblower, the Neutral Intermediary obtains the whistleblower's consent to forward the report to the BPO without performing a separate review. The report can be sent in anonymous form if so requested by the whistleblower.

Contact takes place either in writing or by e-mail. If the Neutral Intermediary feels that personal contact is required, the Intermediary shall request a meeting with the whistleblower.

The Neutral Intermediary also forwards tip-offs received anonymously to the BPO immediately without a separate review. If a whistleblower contacts the Neutral Intermediary directly, the Neutral Intermediary will advise the employee and ask any necessary questions. Other than collecting the necessary information, the Neutral Intermediary does not conduct its own investigation.

To protect the whistleblower's anonymity, the company is barred from accessing the information stored by the Neutral Intermediary under any circumstances.

2.4 Protecting Whistleblowers

Employees who report possible violations based on concrete, factual evidence are protected by the company. The confidentiality of their statements shall be guaranteed. Employees who feel they have suffered repercussions as a result of their report of a violation should contact the BPO. The BPO shall receive and review the facts of the case. Discrimination against or intimidation of an employee because he or she has reported a violation constitutes a breach of the Integrity Code and is subject to disciplinary action under employment law.

Whistleblowers should reveal their identity so that they can be asked questions that could be helpful to the investigation. If a whistleblower requests that his or her identity not be revealed to other entities within the company, this request must be honored. However, completely anonymous reports are also possible if not expressly prohibited under national laws. They shall be investigated to the same extent by the BPO, provided they contain concrete, factual evidence.

Whistleblowers will be notified of the final decision on the BPO case and whether the allegation was with merit, provided they do not remain anonymous.

2.5 Investigative Principles for Ensuring Fair Treatment of Employees Who Are Suspected of Violations

If a suspected violation requires investigation, the investigating unit is required to inform the affected employee immediately in writing unless tactics intended to aid the investigation make notifying the employee impossible. In such instances, the employee must be notified at the first possible opportunity. The employee shall be given the opportunity to respond to the allegations as soon as possible. The employee is allowed to have a person whom he or she trusts (e.g. a member of the Works Council or attorney) present during questioning. If the employee so desires, his or her manager will not be immediately notified of the suspicions unless questioning of the manager is required for examination of the facts.

All employees who are the subject of an investigation regarding a violation are treated fairly. The affected employee is presumed innocent as long as there is no proof of a violation. Incriminating and exonerating evidence shall be given equal consideration in the investigation. Once the final decision on the case has been made, the employee will receive written notification from the competent unit. If the violation is confirmed, his or her supervisor shall also be notified of the results of the investigation.

The right to refuse to provide evidence is governed by local legal regulations.

Employees may exercise their legal right to refuse to answer questions if the investigation involves criminal allegations. In that case, they may suffer no reprisal as a result of their refusal to testify.

In cases involving violations of employment law, employees have no such right to refuse to answer questions.

If the investigation reveals early on that the allegations are unfounded, questioning and notification of the employee is not required.

If the investigation reveals that the suspicions were unfounded, the employee may decide whether his or her manager should be informed, provided the manager has not already been made aware of the matter. At the request of the employee, the manager or other management staff shall announce in an appropriate fashion that the employee was wrongly suspected.

If materials related to the investigation are part of the employee's personnel file, he or she shall have the right to view them if required by applicable laws.

If it is proven that one employee has accused another employee of a violation despite knowledge to the contrary, the accuser shall be deemed in violation of the Integrity Code and subject to disciplinary action.

2.6 Employees' Obligation to Cooperate

All employees are required to support the investigating units. This includes submitting all requested business documentation and providing complete and truthful information regarding business transactions unless prohibited by law. This applies to questioning of witnesses and managers as well. Any attempts by an employee to hinder an investigation by influencing or colluding with witnesses is considered a serious breach of his or her employment duties, and disciplinary action will be taken.

3 Decisions on Measures Taken in Response to Violations

3.1 General criteria

To determine which measures are appropriate in response to a violation, the following criteria are to be considered and weighed on the basis of proportionality:

- The type and severity of the violation
- Risk posed to the company
- Form of fault (intent or negligence)
- The amount of the damage or loss
- Damage to the company's reputation
- Role model function of managers
- Past service and previous conduct of the affected person in the company
- The attitude of the affected employee regarding the violation
- Affected employee's cooperation in verifying the facts of the case and providing compensation for the damage or loss
- Self-disclosure

Accusations are to be carefully weighed against any mitigating circumstances. In similar cases, the same criteria are to be used for evaluating the severity of the violation. The severity of the measures to be taken will be determined by the severity of the violation as determined above.

3.2 Possible Measures

The specific measures are governed by local law. Therefore, individual entities may apply different and/or additional measures, or they may be prevented from taking certain actions.

The following measures may be considered depending on the severity of the violation:

- Verbal or written warning
- Final warning
- Training measures
- Reassignment or transfer
- Separation agreement or opportunity to resign voluntarily
- Termination with option of amended conditions of employment
- Ordinary termination
- Extraordinary termination
- Suspension

Other measures may be taken if the employee is appointed as a member of a governing board (e.g. Board of Management or CEO) and his or her employment is based on a contract for Board Members/CEOs.

3.3 Description of Measures

3.3.1 Warning

Verbal or written warnings are given in cases of minor violations. A warning may also be issued if the employee did not act intentionally, but a warning is necessary to emphasize the importance of the violated rule or to make the employee aware of the unintended consequences of his or her actions.

3.3.2 Final warning

Final warnings are given in the case of violations that are not yet grounds for termination after the first offense but that, if repeated, may be considered serious enough to justify termination.

3.3.3 Training measures

It may be necessary, particularly in the case of unawareness of rules or carelessness and in addition to another non-terminating disciplinary measure, to provide the employee with training.

3.3.4 Reassignment or transfer

Reassignment or transfer may be indicated in addition to or in place of another measure if the employee's duties harbor a risk of repeat violation or if the violation has resulted in a loss of confidence in the employee's ability to fulfill his or her duties.

3.3.5 Separation agreement or voluntary resignation

If the company wishes to separate itself from an employee, it may give the employee the opportunity to resign voluntarily or conclude a separation agreement with the employee.

If there is a clear risk that termination may result in a lawsuit to enforce it, the company can conclude a separation agreement that provides for severance pay of up to half a month's pay per year of employment. Severance pay exceeding half a month's pay per year of employment is permitted only under special circumstances and only with the approval of the Labor Law Unit (HRP/LL) and the head of the HR division.

For employees with foreign employment contracts in other countries, the amount of severance pay normal for the respective country may be offered, generally after confirmation by a law firm.

For managers at Level 2 or higher, the severance pay must also be approved by the members of the Board of Management in charge of HR and IL.

Otherwise, separation agreements are to be established without severance pay.

Promises to disclose the departure to external parties in a positive manner shall not be granted if there were grounds for termination. The issuance of a qualified letter of reference remains unaffected.

3.3.6 Termination with the option of amended conditions of employment

Termination of the existing employment relationship with the simultaneous offer of an employment agreement under different terms or for other duties may be considered if it is necessary to remove the employee from his or her previous duties but doing so is not possible without amending the terms of the employment agreement. This type of termination will only lead to the end of the employment relationship if the employee does not agree to the changes.

3.3.7 Ordinary termination

Employees may generally be terminated with proper notice based on the circumstances of the case and, if applicable, after prior warning in the case of the following types of violations:

- Violation of criminal laws (except those that fall under Section 3.3.8)
- Accepting or giving invitations or gifts of inadmissibly high monetary value
- Severe violation of the general principle of equal treatment
- Severe violation of the duty to treat employees and business partners with respect
- Destruction of evidence or other significant attempt to hinder an investigation
- Breach of manager's duty to report suspected or committed violations that pose a major risk to the company and its employees

3.3.8 Extraordinary termination

Employees may be terminated without notice for due cause based on the circumstances in the case of violation of criminal laws of significant severity, serious breach of contractual duties, unreasonable disruption of the employment relationship or gross violation of the Integrity Code, typically constituted by:

- Bribery or granting of an undue advantage to government officials or business partners and their representatives
- Accepting bribes in the form of money or other similar privileges
- Breach of trust or fraud for personal benefit or the benefit of a third party
- Intentional or grossly negligent inaccuracy in bookkeeping or accounting
- Criminal acts against a person's physical well-being or freedom
- Theft or embezzlement
- Sexual harassment
- Serious cases of workplace bullying
- Substantial enrichment by using company resources/property for private purposes without a contractual agreement or express permission
- Discrimination/reprisal against whistleblowers
- Accusation and reporting of other employees for suspicion of violations despite knowledge to the contrary

3.3.9 Suspension

If the company intends to terminate an employee, or if the company finds continued employment unreasonable for other reasons, the company may, depending on the legal situation, suspend the employee from his/her duties until the end of the period of notice with or without pay if it is no longer acceptable for the employee to remain on the job. Depending on the legal situation, an employee may also be released from his/her duties without pay for other reasons.

3.4 Exclusion of Measures

Measures can be excluded based on the classification of the violation as one that poses a major risk or a minor risk as described in Section 2.1.

Disciplinary measures for violations posing a minor risk can be imposed up to three months after they have been revealed to the HR unit, but no more than six months after the violation itself. Measures for violations posing a major risk can be imposed up to 12 months after they have been revealed to the HR unit. No sanctions are imposed for violations posing a major risk that were committed more than five years in the past.

If the violations are criminal actions, then the period in which the company may take disciplinary action in response to the violations will be based on the respective statute of limitations.

The limits specified above are suspended for the duration of the investigation into suspected violations that pose a minor risk. Suspension shall begin upon notification of the affected employee that an investigation will be conducted, and it shall end upon written notification of the results of the investigation being sent to the affected employee but after no more than three months.

Deviating regulations are allowed on the basis of mandatory legal provisions. Different limits must be reported to the policy owner and will be documented in the further applicable regulation, "Treatment of Violations Policy Specifications."

3.5 Hearing of the Affected Employee

Prior to deciding on a measure, the company has to give the employee a hearing. The employee is allowed to have a person whom he or she trusts (e.g. a member of the Works Council or attorney) present during questioning. The employee's supervisor must also be given a hearing.

3.6 Decision, Communication of Results

The decision shall be made by the responsible HR unit unless local laws prescribe otherwise. In severe cases of confirmed violations falling within the scope of responsibility of the BPO, the decision is to be made by the Business Practices Committee (BPC) in matters concerning employees with a German employment contract or a contract as member of a governing board or CEO. In cases involving employees in other countries, the BPC must be informed of the decision and will conduct a review.

In BPO cases, the final decision must be reported immediately to the BPO, which will file it along with the other documentation related to the case.

3.7 Employee Representatives' Rights to Participate

The participation rights of employee representatives are guaranteed throughout the proceedings in accordance with the respective applicable regulations.

4. Other Measures in Connection with Violations

4.1 Reduction in Compensation and Consequences for Promotions

4.1.1 Effects on variable compensation

For rule violations with a written disciplinary measure, variable compensation must be reduced accordingly where permitted by law.

Employees evaluated under the LEAD system will receive deductions in their individual rating for target achievement. For employees subject to the new Performance Management System, a deduction will be made from the company bonus.

Depending on the type of disciplinary measure, the following ranges apply for deduction in increments of five percentage steps:

Disciplinary measure	Deduction from individual target achievement (LEAD)	Deduction from company bonus
Written warning	0% to 20% points	0% to 20%
Final warning	20% to 50% points	20% to 50%
Ordinary termination	50% to 80% points	50% to 80%
Extraordinary termination	80% to 150% points	80% to 100%

In determining the amount of the deduction within the range, the criteria in Section 3.1 are to be applied and weighed appropriately.

Deductions under the Performance Management and LEAD process are applied to the evaluation period that follows pronouncement of the disciplinary measure. They apply for the entire year, even if the employee transfers jobs during the year.

Corresponding reductions in pay are also to be imposed if disciplinary action cannot be taken because the affected employee is leaving or has already left the company.

4.1.2 Effects on income review and phantom shares for managers at Level 3 and above
If provided, phantom shares and income reviews are allocated in accordance with the following principles whenever disciplinary measures have been taken:

	PPSP allocation	Income review
Written warning without a deduction	Not specified	Not specified
Written warning with deduction	Allocation $\leq \emptyset$	Increase $\leq \emptyset$
Final warning	Allocation $< \emptyset$	Increase $< \emptyset$
Ordinary termination	N/A	N/A
Extraordinary termination	N/A	N/A

4.1.3. Consequences for promotions

Promotion to the next higher level is not granted for 12 months following the disciplinary measure if the employee receives a warning with an effect on compensation. In the case of a final warning, promotion will not take place for 24 months following the disciplinary measure. Any confirmation of potential must be revoked.

4.1.4 Effects on cash bonuses

Cash bonuses or other similar individual payments are not to be issued to employees against whom the company has taken written disciplinary measures based on this policy during the same calendar year as the disbursement or the prior calendar year. This does not apply to written warnings without an effect on compensation.

4.2 Claims for Recovery and Damages

Any existing claims for recovery, repayment and/or damages based on proven rule violations will be enforced against the responsible employee where legally possible.

4.3 Criminal Charges

Criminal charges will be filed in the case of criminal actions if required by law or in the interest of the company.

The company may refrain from filing criminal charges in the following cases in particular:

- The employee confesses and is willing to provide compensation for any damage or loss.
- It is in the interest of the company.

4.4 Documentation

Where allowed by law, the company maintains a list of personnel who have left or were forced to leave the company on account of a proven violation of rules or regulations. The list helps prevent these persons from being rehired by the Daimler Group or, in the case of contractual partners of the Daimler Group, from being placed in or assuming positions of responsibility in which they may work directly with the Daimler Group. In maintaining this list, the company ensures compliance with all applicable data protection requirements.

5 Retention Periods for Information Collected as Part of Investigations

If an investigation reveals that the reported allegation was unfounded, information about the employees collected as part of the investigation is to be deleted immediately. Documentation will not be kept in the employee's file.

If violations posing a minor risk were confirmed, the information collected on the employees will be deleted from the BPO's records after one year.

If violations posing a major risk were confirmed, the information collected on the employees will be deleted after six years.

In the case of violations posing a major risk that were not proven but for which the suspicions were not completely eliminated, records will be deleted after two years. This information can be used again only with the approval of the Corporate Data Protection Officer and, in the case of data concerning employees in Germany, upon notification of the IT officer of the employee representation council.

Deviating periods can apply only under specific national laws.

6 Notification of Employees and Employee Representatives

Once a year and in the context of their responsibility, the German employee representative bodies shall receive a statistical report on cases received by the BPO and their outcomes, broken down by hierarchical level. In particular, the report shows the number of cases, affected locations, types of violations, status and results of the investigations.

Employees will be notified regularly of applicable policies and any changes thereto. Every employee is encouraged to read this information and to stay continuously abreast of any changes and additions to the policies.

7 Conflicting Legal Provisions

If individual regulations of this policy are not applicable due to country-specific, mandatory regulations, the necessary changes must be coordinated with Labor Law (HRP/LL) and the Business Practices Office (GC/PB). Deviating provisions and supplemental information is documented by the policy owner in the further applicable regulation, "Treatment of Violations Policy Specifications."

ATTACHMENT C

DAIMLER

26 July 2019

AECD Documentation Guidelines - EXECUTIVE SUMMARY

July 2019

U.S. AECD Disclosure Documents

- U.S. Environmental Protection Agency (USEPA) sets forth requirements for an OEM's certification applications
- Each application for certification of a light duty vehicle must include:
 - a list of all auxiliary emission control devices (AECDs) installed on any applicable vehicles;
 - a justification/purpose for each AECD;
 - the parameters sensed and controlled by the AECD (measured & modeled parameters that are a part of, or a factor in, an entry and/or exit condition);
 - for each AECD that results in a reduction in effectiveness of the emission control system, a detailed justification and rationale for why it is not a defeat device. *40 C.F.R. § 86.1844-01(d)(11)*
- The presence of any defeat device is strictly prohibited

Auxiliary Emission Control Device means any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system.

Critical concept: AECD disclosures must be true, accurate, and complete

Defeat Device Justifications

Defeat Device

Defeat device means an AECD that **reduces the effectiveness of the emission control system** under conditions which may reasonably be expected to be encountered in **normal vehicle operation and use**, unless:

- 1) Such conditions are **substantially included** in the Federal emission test procedure;
- 2) The need for the AECD is justified in terms of **protecting the vehicle against damage or accident**;
- 3) The AECD does not go beyond the requirements of **engine starting**; or
- 4) The AECD applies only for emergency vehicles. *40 C.F.R. § 86.1803-01*

Justifications

Substantially Included - A function is activated on the certified portion of the US test procedures (i.e., FTP75 or highway (2nd cycle) or US06 (2nd cycle) tests) for a significant portion of time when all activating conditions were present

Engine/Vehicle Protection - The function is **necessary** to protect the vehicle or engine against **damage or accident** and results in the **minimum necessary** reduction in emissions control when viewed in consideration of **other contemporaneously available technology** in the industry

Engine Starting - The function does not go beyond the requirements of **engine starting** if it is necessary to address a requirement of **engine start**, as distinct from **engine warm up**, and is not used to compensate for **poor engine design**

General Guidance: Common AEC D Examples

Gasoline

Engine or Catalyst Warmup Strategy

Adjustments to Commanded Enrichment

A/C-on specific calibrations that reduce emission control effectiveness

Adjustments to emission control systems based on ambient temperature

Adjustments to emission control systems based on altitude and air pressure

Modified gear shift for engine warm up

Diesel

Dual Dosing Strategy

Engine Warmup Strategy

Adjustments to EGR based on temperature

Adjustments to emission control systems based on ambient temperature

Adjustments to emission control systems based on altitude and air pressure

Modified gear shift for engine warm up

The above lists are illustrative examples only; they DO NOT constitute complete listings of all potential AEC Ds for gasoline or diesel vehicles.

DAIMLER

4 June 2019

AECD Documentation Guidelines

June 2019

Table of Contents



Background & Objectives

1



General AECD Disclosure Guidelines

2



Other Considerations

3



Practical Guidance

4



Appendix

5

Table of Contents



Background & Objectives

1



General AECD Disclosure Guidelines

2



Other Considerations

3



Practical Guidance

4



Appendix

5

Background

Overview

This document offers compliance guidance on U.S. vehicle emission regulations, specifically in connection with identifying and disclosing all Auxiliary Emission Control Devices (AECDs).

A few factors make identifying AECDs difficult. **The definition of AECD is very broad** such that many vehicle functions with no emission impact or even a positive emission impact may qualify as an AECD. The definition was written in the context of older vehicle technologies, in particular heavy duty. **EPA has not made many statements about the application of this definition to newer, light duty vehicle technologies.**

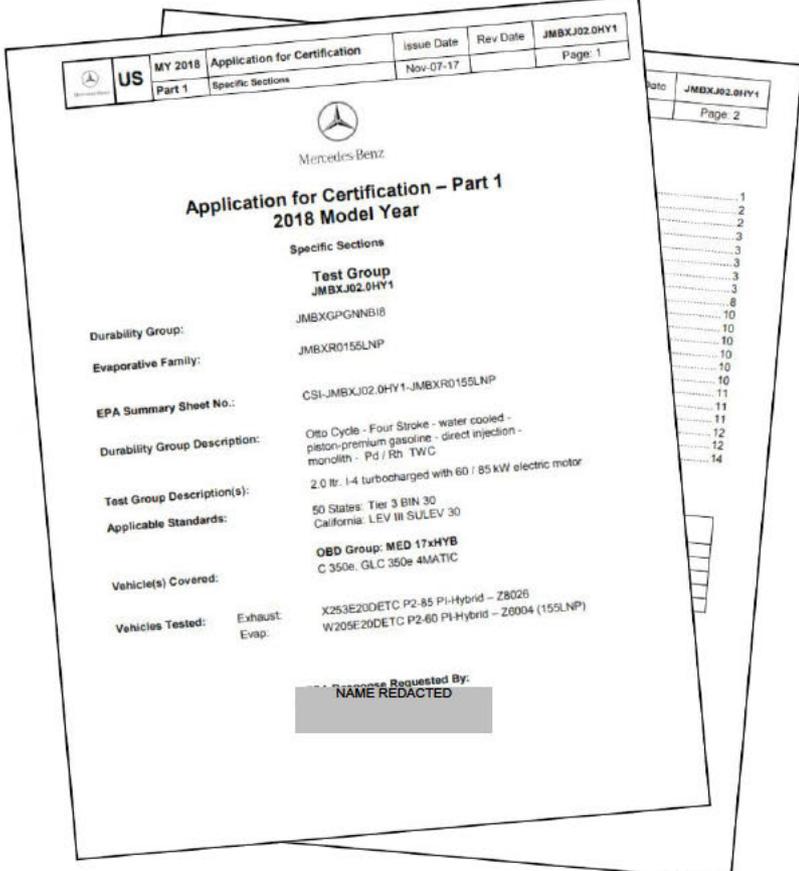
Objective

This internal guidance document aims to help Daimler experts appropriately identify all AECDs that must be disclosed in each Certificate of Conformity (COC) application.

Experts must **critically assess new functionalities and calibrations**, and when deciding whether disclosure is required, should **err on the side of more disclosure**.

U.S. AECD Disclosure Documents

- U.S. Environmental Protection Agency (USEPA) sets forth requirements for OEM's certification applications
- Application for certification of a light duty vehicle must include:
 - a list of all auxiliary emission control devices (AECD) installed on any applicable vehicles;
 - a justification/purpose for each AECD;
 - the parameters sensed and controlled by the AECD (measured & modeled);
 - for each AECD that results in a reduction in effectiveness of the emission control system, a detailed justification and rationale for why it is not a defeat device. *40 C.F.R. § 86.1844-01(d)(11)*
- The presence of any defeat device is strictly prohibited



The image shows a Mercedes-Benz Application for Certification - Part 1 for the 2018 Model Year. The form includes a header with the Mercedes-Benz logo and the text 'Mercedes-Benz Application for Certification - Part 1 2018 Model Year'. Below the header is a table of contents with page numbers. The form is divided into several sections: Durability Group, Evaporative Family, EPA Summary Sheet No., Durability Group Description, Test Group Description(s), Applicable Standards, Vehicle(s) Covered, and Vehicles Tested. The Durability Group is JMBXJ02.0HY1. The Evaporative Family is JMBXGPGNNB18. The EPA Summary Sheet No. is CSI-JMBXJ02.0HY1-JMBXR0155LNP. The Durability Group Description is Otto Cycle - Four Stroke - water cooled - piston-premium gasoline - direct injection - monolith - Pd / Rh / TWC. The Test Group Description(s) is 2.0 ltr. I-4 turbocharged with 60 / 85 kW electric motor. The Applicable Standards are 50 States: Tier 3 BIN 30 and California: LEV III SULEV 30. The Vehicle(s) Covered are OBD Group: MED 17xHYB and C 350e, GLC 350e 4MATIC. The Vehicles Tested are X253E20ETC P2-85 Pi-Hybrid - Z8026 and W205E20ETC P2-60 Pi-Hybrid - Z8004 (155LNP). The form also includes a section for 'Response Requested By:' with the name redacted.

Critical concept: AECD disclosures must be true, accurate, and complete

Table of Contents



Background & Objectives

1



General AECD Disclosure Guidelines

2



Other Considerations

3



Practical Guidance

4



Appendix

5

General Guidelines: Overview

Basic Premise

- All AECs **must be disclosed** in the certification application. (*40 C.F.R. § 86.1844-01*)
- AECs that **reduce the effectiveness of the emission control system** , and do not meet one of the applicable exceptions, are **prohibited defeat devices**.
- As part of the AEC documentation, and in an abundance of caution, the Company's current practice is to **disclose transmission functions** that may be used for the purpose of and/or indirectly **result in modulating** the operation of a part of the **emission control system**, even if such functions may not necessarily constitute an AEC.
- **Failure to document AECs** or to justify potential defeat devices can result in **penalties, fines and vehicle recalls**.
- **When in doubt, disclose** a function as an AEC and **contact QM/RZA and/or RD/T**.

AECDs – Key Definitions

Auxiliary Emission Control Device

Auxiliary Emission Control Device (AECD) means any **element of design** which **senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter** for the purpose of **activating, modulating, delaying, or deactivating** the operation of **any part of the emission control system**.

Emission Control System means a **unique group of emission control devices**, auxiliary emission control devices, engine modifications **and strategies, and other elements of design** designated by the Administrator **used to control exhaust emissions of a vehicle**. *40 C.F.R. § 86.1803-01*

Defeat Device

Defeat device means an AECD that **reduces the effectiveness of the emission control system** under conditions which may reasonably be expected to be encountered in **normal vehicle operation and use**, unless:

- 1) Such conditions are **substantially included in the Federal emission test procedure**;
- 2) The need for the AECD is **justified** in terms of **protecting the vehicle against damage or accident**;
- 3) The AECD does not go beyond the requirements of **engine starting**; or
- 4) The AECD applies only for **emergency vehicles**.

40 C.F.R. § 86.1803-01

Potential AECD Justification: Substantially Included

Regulatory Justification

“Substantially included in the Federal emission test procedure”

Summary

A function is activated on the **certified portion** of the US test procedures (i.e., **FTP75** or **highway** (2nd cycle) or **US06** (2nd cycle) tests) for a **significant portion of time** when **all activating conditions** were present.

Key Questions & Considerations

- Is the function activated during the completion of the **applicable certified portion** of the testing procedure? *[USEPA, CCD-04-12 (HD) (June 15, 2004) at 1]*
 - If the function is only **sometimes activated** during the test procedures (e.g., **varies based on driver influence**), a **different justification** is be preferable
- In the alternative, a “**manual demonstration**” approach is possible, but must first be **approved by the agencies**. If approved, the manual demonstration procedure must be **fully disclosed** in the AECD documentation,¹ and the demonstration must show the **full extent** of the function during certification testing.
- If yes, is the function **activated long enough** during the test to allow its **impact on the vehicle’s emissions** to be meaningfully reflected in the test’s emissions results? *[USEPA, CCD-04-12 (HD) (June 15, 2004) at 1]*
 - Likely requires **fact-specific consideration** of the operation and resulting emissions impacts of the function
 - Emissions control for operation outside of and between official test modes is expected to be similar to emissions control demonstrated at test modes *[USEPA, CCD-04-12 (HD) (June 15, 2004) at 2]*
 - Regulators are likely to view this term to mean that the **predominant impact of the function is observed on the testing cycle**.
 - For example, a function that operates briefly on cycle but is active for a substantial period of normal driving off cycle would likely not be considered substantially included.

1.

CBI REDACTED

Potential AECD Justification: Component Protection 1/2

Regulatory Justification

“Protecting the vehicle against damage or accident”

Summary

A function is **necessary** to protect the vehicle or engine against **damage or accident** and results in the **minimum necessary** reduction in emissions control when viewed in consideration of **other contemporaneously available technology** in the industry.

Key Questions & Considerations

- Does the AECD reduce the effectiveness of the emission control system to **protect the vehicle, engine or a component against damage or accident**?
- Does the AECD operate to the **minimum extent necessary** to prevent such damage or accident? *[USEPA VPCD 98-13 (Oct. 15, 1998) at 9-10]*
 - What kind of information is available to support this justification? E.g., spec documents from suppliers, industry papers supporting use of the technology in the industry, field data and/or testing data.
 - Is the emission system degradation that occurs when the AECD is activated “**no more than necessary**” to protect a well-designed engine?
- Are there any **other technology options available** to substitute for the AECD that would eliminate or reduce the need for the emissions-increasing AECD? *[USEPA VPCD 98-13 (Oct. 15, 1998) at 9-10; USEPA AC No. 24-3 (Jan. 19, 2001) at 4-5; 65 Fed. Reg. 59,896, 59,919-20 (Oct. 6, 2000); 57 Fed. Reg. 31,888, 31,894-95 (July 17, 1992)]*
 - Is the AECD **necessary** and the **vehicle design adequate** as compared to manufacturer’s peers and their use of available technology?
 - Is the design or technology “**frail**”, outdated, or inferior to competitors/peers? Are **better alternatives** available?

Potential AECD Justification: Component Protection 2/2

Key Questions & Considerations

- From 40 CFR §86.1809-10 Prohibition of defeat devices- (d) The following provisions apply for vehicle designs designated by the Administrator to be investigated for possible defeat devices:
 - (1) The manufacturer must show to the satisfaction of the Administrator that the vehicle design does not incorporate strategies that unnecessarily reduce emission control effectiveness exhibited during the Federal Test Procedure or Supplemental Federal Test Procedure (FTP or SFTP) when the vehicle is operated under conditions that may reasonably be expected to be encountered in normal operation and use
 - In other words- in reviewing the entry conditions of a component protection strategy- the agency is likely judge strategies that do not result from ‘extreme use cases’ as unnecessary reductions in emissions control effectiveness, and therefore may determine that the justification does not apply or such strategies qualify as defeat devices. It is important to note that the criteria for acceptance of this justification for a strategy is that failure to use the strategy would result in damage (i.e. failure) or accident. The agencies will challenge the use of this justification if it seems likely from a review of the entry conditions that the strategy will occur frequently.

Potential AECD Justification: Engine Start

Regulatory Justification

“The AECD does not go beyond the requirements of **engine starting**.”

Summary

A function does not go beyond the requirements of **engine starting** if it is necessary to address a requirement of **engine start**, as distinct from **engine warm up**, and is not used to compensate for **poor engine design**.

Key Questions & Considerations

- Is the AECD necessary to address a requirement of **engine start** or is it also used after engine start (such as for **engine warm up**)?
 - **Engine start** is a **short and distinct** time period characterized by starting the engine “according to the manufacturer’s recommended starting procedures in the owner’s manual.” *[40 C.F.R. § 86.136-90]*
 - **Engine start** is separate from **engine warm up**. The engine warm up cycle occurs after engine start and is defined as “sufficient vehicle operation such that the **coolant temperature has risen by at least 40 deg. F** from engine starting and reaches a **minimum temperature of 160 deg. F**.” *[40 C.F.R. § 86.1803-01]*
 - An AECD is only justified under this provision if it is required for **engine starting**, not for **engine warm up**.
- An example of a justified engine starting AECD is a fuel solenoid “used to facilitate engine starting and only operates during cranking and for the first 10 seconds after starting when the engine coolant is below 50 degrees F and the [ECU] is in a default mode. Consequently, this solenoid reduces the effectiveness of the emission control system (fuel strategy and catalyst) but is justified by its limited operation.” *[USEPA, EPA420-B-98-002 at A24-25 (1999)]*
- Is the AECD used to **compensate for poor engine design** when compared to available technology employed by other OEMs? *[USEPA AC 24-3]*
 - If so, it may not be justified under this provision.

General Guidelines: Information Requirements

The application must include:

Per regulation *40 C.F.R. § 86.1844-01(11)*

1

A description of **all AECDs** installed on any applicable vehicles (i.e., all vehicle models and model variants covered by the application)

2

For **every AECD**, a list of **all** of the parameters sensed and controlled

3

For each AECD that results in a **reduction in effectiveness of the emission control system** (i.e., potentially a defeat device), a justification and rationale for why it is not a defeat device

Per what EPA expects

- An explanation of the function's purpose
- A description of how and when the function operates, including a listing of parameters sensed and actions taken
- Including a listing of **all** related **measured and modeled**¹ parameters that are a part of, or a factor in, an entry and/or exit condition and **all** actions taken
- A listing of **all entry and exit conditions**²
- A listing of relevant calibration information (particularly for diesel emission controls)
- A listing of regulatory justifications for the function
- An explanation of potential emission impact and conditions under which the impact would occur, with reference to on- and off-cycle impacts (particularly for diesel AECDs)

1. Modeled parameters are those physical parameters that are calculated using a mathematical model rather than a sensor. Calculations may not need to be provided (particularly for gasoline models); however, underlying parameters used in the model should be summarized if possible (either in measured parameters list or in the remarks section). 2. These are the calibrations that act as prerequisite conditions for an AECD's activation or deactivation. These do not need to include conditions that are "calibrated off."

General Guidance: Common AECD Examples

Gasoline

Engine or Catalyst Warmup Strategy

Adjustments to Commanded Enrichment

A/C-on specific calibrations that reduce emission control effectiveness

Adjustments to emission control systems based on ambient temperature

Adjustments to emission control systems based on altitude and air pressure

Diesel

Dual Dosing Strategy

Engine Warmup Strategy

Adjustments to EGR based on temperature

Adjustments to emission control systems based on ambient temperature

Adjustments to emission control systems based on altitude and air pressure

The above lists are illustrative examples only; they DO NOT constitute complete listings of all potential AECDs for gasoline or diesel vehicles. Please refer to the Appendix for additional examples.

Table of Contents



Background & Objectives

1



General AECD Disclosure Guidelines

2



Other Considerations

3



Practical Guidance

4



Appendix

5

Other Considerations: Necessity of the Function

Consider the following questions before seeking to describe and justify the function in the disclosure

Stated Purpose

- What problem or issue does the AECD resolve?
- What are the consequences of not employing this AECD?

Motivations

- What was considered when calibrating the AECD/how were the calibration values chosen?
- Do any of the AECD calibrations, including exit/entry, have a test cycle orientation?

Impact and Application

- Does the AECD operate the same way under similar driving conditions on road versus during testing?
- Does the AECD have an emission impact (positive or negative)?

Quality of Disclosure

- Does the AECD behave as explained in the documentation?
- Does the description cover the full range of behavior of the AECD under the circumstances across a reasonably foreseeable operating range for normal driving?

Other Considerations: Baseline Calibrations

Baseline calibrations ARE NOT exempt from evaluation under the AECD disclosure requirements

- Unlike the EU, US authorities do not define “baseline” functionality for light duty vehicles. EPA has not clarified whether all baseline calibrations need to be disclosed.
- Agency guidance suggests that baseline functions can be AECDs:
 - “... base emission control calibrations meet the definition” of an AECD. *[USEPA, CCD-04-12 (HD) (June 15, 2004) at 1 (citing USEPA AC No. 24-3 (Jan. 19, 2001); USEPA VPCD 98-13 (Oct. 15, 1998))]*
 - An “AECD can include any element of design or control strategy including, for example, elements of the basic fuel metering and timing strategy imbedded within the engine’s computer control system.” *[USEPA AC No. 24-3 at 3-4.]*
- If baseline calibrations have historically been disclosed, then they should continue to be disclosed.
- Baseline calibrations that have the same effect as an AECD or that have an impact on off-cycle emissions should be disclosed (particularly for diesel vehicles).
- Experts should flag for QM/RZA and RD/T any baseline calibrations that might appear to have any cycle orientation.
- Further, any baseline calibrations that will result in a substantially different emission impact off-cycle as compared to on-cycle should be re-evaluated.

Other Considerations: Risk Areas

The following types of functions should be considered carefully and thoroughly justified

- Functions with **timers**
- **Off-cycle functions** that do not operate on the test cycle
- **Cycle-oriented functions** that operate only within ranges that are similar to the test cycle operating ranges or that are otherwise calibrated to cease operation after testing has concluded
- **Functions that shut off** entirely or **disable** any part of **the emission control system**
- **Functions that temporarily improve emission performance** at any point during the testing cycle
- Other unidentified issues – this list is **not exhaustive!**

Table of Contents



Background & Objectives

1



General AECD Disclosure Guidelines

2



Other Considerations

3



Practical Guidance

4



Appendix

5

Continuing Obligations

Reviewing of Functions/Calibrations and Updating of Disclosures is a Continuing Obligation

Every application should be considered as a new document. **Do not assume that past filings** for prior model years or for the same vehicle in a different market **will have the requisite disclosures**. Instead, experts should take a holistic approach when drafting and reviewing new applications.

Key Things to Consider and Evaluate Include:

Step 1*

- Functions previously disclosed as AECs in any prior model year for any US certified vehicle

Every Year

Step 2

- New functions *and/or* any new calibrations that operate within, influence, or act on any part of the emission control system, including combustion or aftertreatment system

Every Year

Step 3

- All other elements of design that potentially meet the broad AEC definition (including existing functions that were not previously disclosed but that should potentially be reevaluated)

For New Configurations

*Certain functions in Step 1 may not require disclosure. For example, a function may be more appropriately disclosed in the OBD documentation or a previously disclosed function may be modified in such a way that it no longer qualifies as an AEC. Under either of those examples, however, the function should likely be referenced in the AEC documentation and the decision not to include the function should be made by QM/RZ and RD/T and likely communicated to the Agency.

Disclosure in Every Application

Practical Guidance

A rule of thumb for disclosure is that **the reviewing agency should be able to discern** the following information from the disclosure:

- a) **how the function will operate** under various driving circumstances both on and off the dynamometer (including a listing of all the parameters sensed and controlled and exit/entry conditions);
- b) all potential **emission impacts** caused by the function; and
- c) the basis and **need for including the function**.

ATTACHMENT D

DAIMLER

Software-Compliance Guide V1.1 (valid as of 25.02.2019) Ensuring technical compliance in RD software development

This SW Compliance Guide was developed on the basis of legal texts and internal guidelines without fully incorporating the respective content. It serves to provide guidance for software development and manifests Daimler's fundamental understanding of technical compliance. Therefore, this guide does not replace processes and requirements for each compliance category that are already in place. In case of doubt you should therefore contact the person in charge for each compliance category or your responsible tCMS contact person.

Overview of contact persons for each compliance category

Name

Email

Phone

Information security



Product safety



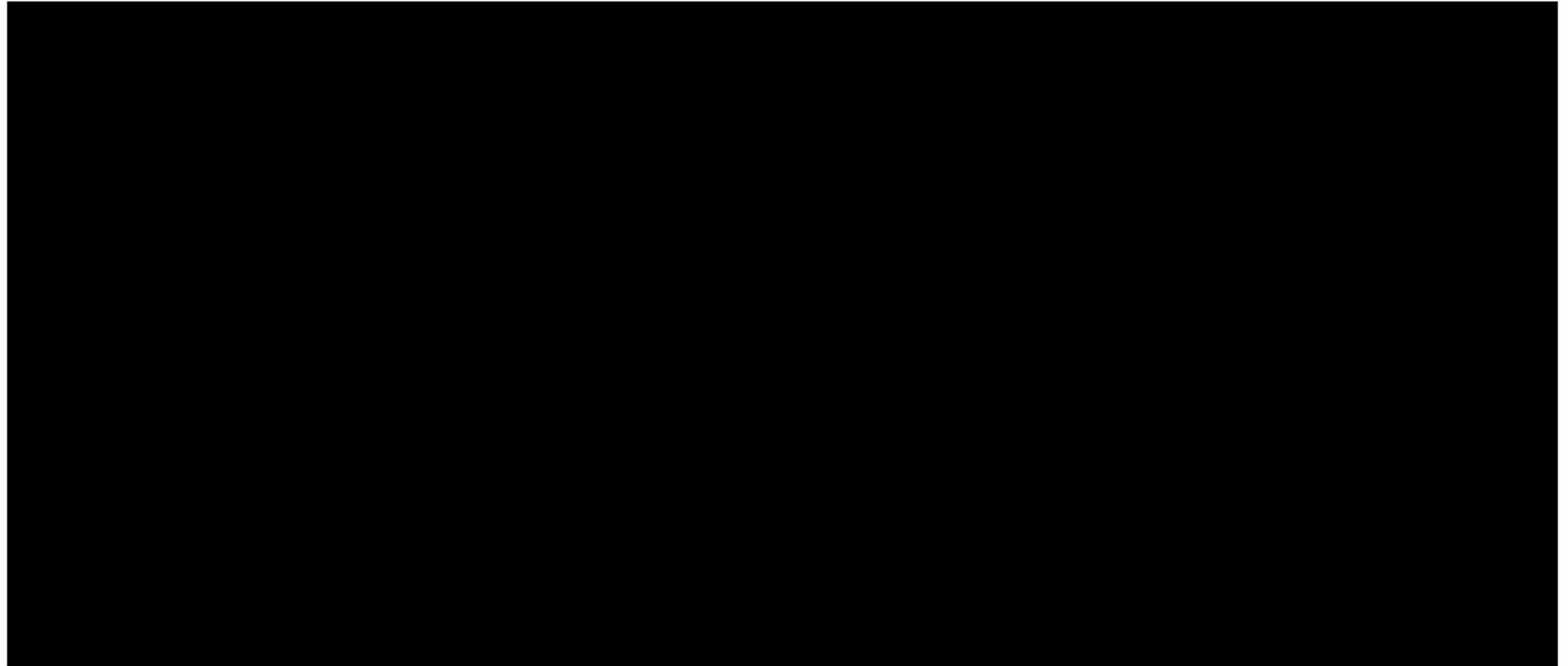
Environmental compliance



Intellectual property



Product conformity



For editorial enquiries please contact



The SW-Compliance guide contributes to ensuring Daimler's compliance promise

“

Compliance is important for us. Therefore we have implemented multiple systems over the past years – e. g. to prevent corruption, to comply with antitrust law and technical compliance.

By that we can meet the specific requirements of the product development process and provide our employees safety and guidance in their day-to-day work. ”

Source: tCMS Pocket Guide



The SW-Compliance guide defines key terms and principles

Goals of the guide



Enhancement of **transparency about key terms** regarding technical compliance



Consolidation of **fundamental principles** concerning technical compliance in Daimler's corporate culture



Introduction of **measures** that contribute towards ensuring technical compliance

The SW-Compliance guide applies to all RD areas at MBC, Vans and AMG worldwide

Scope of the guide

- The SW-Compliance guide must be respected **for all software development processes** and is applicable:



For employees in RD areas at
MBC, Vans and AMG



Worldwide



As of the guide's release date



Software compliance must be considered in five dimensions

Category	Information security	Product safety	Environmental compliance	Intellectual Property	Product conformity
Objectives	Ensuring confidentiality, integrity and availability of information	Ensuring that only safe products are placed on the market	Ensuring that regulatory and internal environmental protection requirements are met	Ensuring lawful use and prevent risks from infringement of software-relevant property rights	Ensuring the fulfillment of customer expectations for functions & features
Sub-categories	Data security and availability	Active safety	OBD	Technical property rights (patents)	Consistency of information
	Data protection	Passive safety	Consumption & CO2	Copyrights	Congruence of advertised & actual functions
	Telecommunications regulation	Hazard protection	Noise	Non-technical property rights (brands, designs, domains)	Consistency of product documentation
		Emissions	Trade secrets		

Fundamental principles for technical compliance

Fundamental principles

- **Compliance and integrity** are an integral part of Daimler's corporate culture and of our day-to-day business.
- As **employees in development departments**, we have a **special role to play** in this: we help shape products right from the start and are also **responsible in the process for the integrity and compliance** of our products.
- We develop our software according to the principle that **technical regulations, standards, software QMH specifications and laws** are **observed, risks to life and limb and property are minimized by taking possible and appropriate measures, the environment is protected and resources are conserved in the best possible way.**
- The software we develop is always **designed in light of predictable customer behavior**, taking compliance and integrity into account.
- Necessary **comments** in the software code are formulated in an **understandable and factual way; data to be stored is clearly defined.**
- Software functions **take into account the scope of the vehicle's equipment** and are adapted accordingly if necessary.

Definition of key terms (1/2)

Term	Definition
Compliance requirements	All the rules that have to be observed by the organization and its employees, whether they are legal or regulatory compliance requirements or such rules, which the organization has declared applicable on its own or rules, which another organization has declared applicable for its members.
Compliance	Fulfillment of compliance requirements.
OBD	On-board vehicle diagnostic system (on-board diagnosis). During operation, all systems influencing the exhaust gases are monitored, as well as other important control units whose data is accessible via their software. Any faults that occur are indicated to the driver by a control lamp and permanently stored in the respective control unit.
Optimization in relation to a cycle/test	Applies if the product behavior outside cycle/test situations but under normal driving conditions deviates negatively from the product behavior during cycle/test situations without the deviation having a physical-technical justification. A physical-technical justification is required in particular if the performance of the product under cycle/test situations falls significantly outside the cycle/test situations.
Cycle/test situations	Standardized procedures for the evaluation of product properties carried out by authorities or legally recognized third parties.
Cycle/test detection	Function of a product that recognizes the execution of a test.

Definition of key terms (2/2)

Term	Definition
Information	All values and settings of the vehicle, including all user interfaces used, such as the vehicle HMI, apps, browser portals, operating instructions etc., are considered information.
Information customers	Customers for this information can include the driver, passengers, all other users or readers of the user interfaces, but also public authorities or third-party companies with whom this information is exchanged once or regularly.
Telecommunications Act	If companies act as telecommunications providers, this results in special obligations and legal requirements that must be complied with. One of the main obligations under the Telecommunications Act is to collect and store connection and communication data and make it available to the authorities on request.

Software compliance must be considered in five dimensions

Category	Information security	Product safety	Environmental compliance	Intellectual Property	Product conformity
Objectives	Ensuring confidentiality, integrity and availability of information	Ensuring that only safe products are placed on the market	Ensuring that regulatory and internal environmental protection requirements are met	Ensuring lawful use and prevent risks from infringement of software-relevant property rights	Ensuring the fulfillment of customer expectations for functions & features
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	Data protection	Passive safety	Consumption & CO2	Copyrights	Congruence of advertised & actual functions
	Telecommunications regulation	Hazard protection	Noise	Non-technical property rights (brands, designs, domains)	Consistency of product documentation
		Emissions	Trade secrets		

Technical compliance principles for Data security and availability

Privacy	<ul style="list-style-type: none">• Software functions must be designed in such a way that the storage and transmission of data is protected and the data is therefore not accessible to unauthorized third parties. This must be ensured in particular by the use of suitable cryptographic methods (e.g. TLS encryption as standard for cross-system communication).• Software functions must be designed in such a way that access controls are regulated to prevent unauthorized access. In particular, it is therefore necessary to ensure that<ul style="list-style-type: none">– Data access rights are granted according to the "need to know" principle– Compliant authentication and authorization of users (e.g. two-factor authentication)
Authenticity	<ul style="list-style-type: none">• Software functions must be designed in such a way that the authenticity of sender and receiver is ensured (e.g. by using digital signatures).
Falsification protection	<ul style="list-style-type: none">• Software functions must be designed in such a way that unwanted or malicious changes can be identified (e.g. using digital signatures or cryptographically secured hash algorithms).
Reliability	<ul style="list-style-type: none">• Software functions must be designed in such a way that system failures are avoided as far as possible (e.g. through regular updates and patches).• Software functions must be designed in such a way that redundant backup systems are provided in the event of a system failure (depending on their criticality).
Data backup	<ul style="list-style-type: none">• Software functions must be designed in such a way that data losses are avoided as far as possible (e.g. by creating and regularly checking backups or managing them using repository systems).

Technical compliance principles for Data protection

Appropriation	<ul style="list-style-type: none">• Software functions must be designed in such a way that personal data is only collected to the extent and exclusively for purposes to which the user has previously agreed. The appropriateness of the collection of personal data for these purposes must be questioned.
Data minimization	<ul style="list-style-type: none">• The early anonymization of personal data must be ensured.• Software functions must be designed in such a way that as little personal data as possible is stored in as few places as possible. If possible, the purpose of the software function is to be fulfilled without storage.
Transparency	<ul style="list-style-type: none">• Software functions are to be designed in such a way that personal data are only collected after the active consent (permanent or situational) of the user and users are informed about the collection of personal data (e.g. a continuous collection of location data must be displayed to the user).• Software functions must be designed in such a way that users can control the collection of their personal data (e.g. revoke, restrict, pause, permanently stop, etc.). This control must be accessible in a user-friendly manner.
Storage and deletion	<ul style="list-style-type: none">• The deletion and storage concepts for personal data must not be jeopardized by the exchange of information between components or the storage of data by other components.
Data topicality	<ul style="list-style-type: none">• For the data sources used, it must be ensured that personal data is correct, complete and up-to-date at the time of collection.

Source: Daimler Privacy Policy, Guide to the permissibility of the use of personal data for IT development and testing purposes, for further questions and information on current topics, please contact your data protection officer

Technical compliance principles regarding the Differentiation of the „Telecommunications Act“

Avoidance of telecommunication relevance

- Software functions must be designed in such a way that **relevance within the meaning of the Telecommunications Act is avoided**, as this gives rise to special obligations and legal requirements (in particular the collection and storage of connection and communication data in order to make them available to the authorities on request).
"Telecommunications services" are generally services provided against payment which consist entirely or predominantly of the transmission of signals via telecommunications networks. In particular, the **provision of an infrastructure** for the provision of signal transmission in the sense of a telecommunications service must be critically questioned (e.g. an unrestricted possibility of communication via fully integrated, unrestricted chat).
- If functionalities are necessary for the software development that require classification in the sense of the Telecommunications Act, it must be clarified in consultation with software architects how this telecommunications relevance can be avoided by a **different architecture or a fundamental redesign** of the service.
- In the development of software functions in the sense of signal transmission, it must be questioned whether the intended purpose goes beyond the **mere connection of external content** and thus creates added value (no mere "forwarding of a third service").

Software compliance must be considered in five dimensions

Category	Information security	Product safety	Environmental compliance	Intellectual Property	Product conformity
Objectives	Ensuring confidentiality, integrity and availability of information	Ensuring that only safe products are placed on the market	Ensuring that regulatory and internal environmental protection requirements are met	Ensuring lawful use and prevent risks from infringement of software-relevant property rights	Ensuring the fulfillment of customer expectations for functions & features
Sub-categories	Data security and availability	Active safety	OBD	Technical property rights (patents)	Consistency of information
	Data protection	Passive safety	Consumption & CO2	Copyrights	Congruence of advertised & actual functions
	Telecommunications regulation	Hazard protection	Noise	Non-technical property rights (brands, designs, domains)	Consistency of product documentation
			Emissions	Trade secrets	

Technical compliance principles for Product safety (in general) – (1/2)

Protection of persons and the environment

Software functions must meet the specified **safety** requirements for the **protection of human life and physical integrity** (these must be given higher priority than other considerations of usefulness).

Science and technology

- Software functions must be developed in accordance with the current state-of-the-art in **science and technology**. Possible dangers to life and limb as well as objects are to be avoided with appropriate and technically feasible means.

System boundaries

- Cross-system software functions must be considered "end-to-end", i.e. across **system boundaries and interfaces**.

Verification/ transparency

- Where necessary, **restrictive system states** depending on the severity must be displayed to the customer or logged.

Independence

- Software functions must always be designed in such a way that safety-relevant functions in the vehicle are also available **without any external connection** (e.g. mobile data) or a safe state is achieved.

User information

- Software functions must be designed in such a way that users are **informed early enough of safety-relevant faults**, so that preventable dangers to life and limb and objects can be avoided as far as possible. This information must also be comprehensible to the "least informed consumer".

Technical compliance principles for Product safety (in general) – (2/2)

Safety monitoring	<ul style="list-style-type: none">• Software functions must be designed in such a way that the identification of critical system states is guaranteed by secure monitoring.
Risk-reducing protective measures	<ul style="list-style-type: none">• Software functions must be designed in such a way that as soon as critical system states are detected, risk-reducing measures (e.g. an alert display) are initiated as quickly as possible.
Predictable misuse	<ul style="list-style-type: none">• Software functions must be developed taking into account the possible foreseeable misuse. In particular, it must be ensured that:<ul style="list-style-type: none">– Safety-relevant functionalities are not accidentally activated/deactivated/used by the user (depending on the design of the safety-relevant function)– Users are informed when safety-relevant functions are activated or deactivated
Driver distraction	<ul style="list-style-type: none">• Software functions must be designed in such a way that the driver's attention is not distracted from road traffic (see Driver Distraction and Ergonomics¹).

1. Responsible department RD/UI, RD/KC

Technical compliance principles for Active and passive safety

Operating safety	<ul style="list-style-type: none">• Software functions must be designed in such a way that, in normal use, no avoidable hazards could arise from the interaction with the vehicle.
Driving safety	<ul style="list-style-type: none">• Software functions must be designed in such a way that, in normal use, short-term system malfunctions remain manageable without negative effects on the immediate continuation of the journey.• Software functions must be designed in such a way that the vehicle remains controllable during the transition between the normal function and the substitute reaction in the event of a system failure
Driver-fitness safety	<ul style="list-style-type: none">• Software functions must be designed in such a way that the driver's physical and mental ability to drive in normal use is not impaired.
Perceptual safety	<ul style="list-style-type: none">• Software functions must be designed in such a way that safety-relevant information can be adequately perceived in normal use.
Preventative actions	<ul style="list-style-type: none">• Software functions for PRE-SAFE systems must be designed in such a way that, in the event of a possible unavoidable accident being detected, the system is prepared for the impending accident by using all appropriate sensor information.
Post crash	<ul style="list-style-type: none">• Software functions must be designed in such a way that the protection of human health is ensured as quickly and as well as possible after an accident.

Technical compliance principles for Hazard protection

Mechanical stress	<ul style="list-style-type: none">• Software functions must be designed in such a way that possible hazards to life and limb from mechanical stress are avoided by appropriate and technically feasible means (e.g. anti-pinch protection).
Thermal stress	<ul style="list-style-type: none">• Software functions must be designed in such a way that possible hazards to life and limb from thermal stress are avoided by appropriate and technically feasible means.
Electromagnetic stress	<ul style="list-style-type: none">• Software functions must be designed in such a way that possible hazards to life and limb from electromagnetic stress are avoided by appropriate and technically feasible means.
Toxic exposure	<ul style="list-style-type: none">• Software functions must be designed in such a way that potential hazards to life and limb from toxic exposure are avoided by appropriate and technically feasible means.
Remote control	<ul style="list-style-type: none">• When developing software functions, it must be taken into account that the remote operation of vehicle functions implies the same effects on actuators and thus the same relevance in terms of hazard protection.

Software compliance must be considered in five dimensions

Category	 Information security	 Product safety	 Environmental compliance	 Intellectual Property	 Product conformity
Objectives	Ensuring confidentiality, integrity and availability of information	Ensuring that only safe products are placed on the market	Ensuring that regulatory and internal environmental protection requirements are met	Ensuring lawful use and prevent risks from infringement of software-relevant property rights	Ensuring the fulfillment of customer expectations for functions & features
Sub-categories	Data security and availability	Active safety	OBD	Technical property rights (patents)	Consistency of information
	Data protection	Passive safety	Consumption & CO2	Copyrights	Congruence of advertised & actual functions
	Telecommunications regulation	Hazard protection	Noise	Non-technical property rights (brands, designs, domains)	Consistency of product documentation
			Emissions	Trade secrets	

Technical compliance principles for Onboard Diagnostics (OBD) (1/2)

Protection of health and the environment	<ul style="list-style-type: none">• OBD diagnoses must always be designed in such a way that OBD-relevant malfunctions are detected and displayed accurately and in good time. If this is not possible in accordance with the legal requirements, consultation with the certification and the authorities is required.
Importance/priority	<ul style="list-style-type: none">• In principle, software functions must meet the legal requirements for OBD without causing other mandatory requirements (such as emissions or noise emissions) not to be met. This must be ensured, even if it is at the expense of comfort or performance requirements.
Test/cycle detection	<ul style="list-style-type: none">• The release conditions of the diagnoses must be designed for real driving operation under the legally defined operating conditions and must run simultaneously in the legally defined cycle¹.
Physical orientation	<ul style="list-style-type: none">• Diagnoses must be activated and deactivated on the basis of physical conditions.• Diagnosis gaps must be systematically identified and avoided.• OBD-relevant diagnoses must be designed in such a way that counters, timers (e.g. time after engine start), integrated parameters, memory elements or other parameters with potential test cycle relevance are only used for absolutely necessary and justifiable changes in system behavior - if necessary, consult certification and technical compliance departments before application.

1. special conditions apply to functions that use the dyno mode - these must be coordinated with certification and technical compliance prior to software changes

Technical compliance principles for Onboard Diagnostics (OBD) (2/2)

Reversibility

- Software functions must, as far as technically possible, be **reversible** with regard to activation and deactivation conditions.

Normal operating conditions

- Software functions must be designed to ensure that the **OBD system** can **run** under real driving conditions.
- A robust OBD system is based to the physical limits of the components and (sub-)systems.

Diagnostic design

- **Intrusive diagnoses** should generally be avoided and only be allowed after **consultation with the authorities**. In any case, running an entire intrusive diagnosis in the legally defined exhaust test cycles is required, unless otherwise specified/ordered by an authority.
- **Diagnoses** and adaptations must be coordinated across **systems** in order to rule out diagnosis gaps. Transverse-locking (i.e. interference/disabling of OBD-relevant functions/diagnoses by non OBD-relevant functions/diagnoses) must be excluded.
- **Software functions of electronic control units** that can be of **OBD relevance in the future must** be designed in conformity with OBD.

Documentation

- **Certification-relevant documents** must be **correct, clear and complete and adhere to all legal requirements**.
- Possible **effects of software changes on certification-relevant documentation must be taken into account** and adjustments in the corresponding documents are to be made and coordinated with the certification department prior to the software implementation.
- Software functions, including their calibration, must be **logically comprehensible** for an expert third party.

Technical compliance principles for Fuel-consumption-related software functions

Protection of health and the environment	<ul style="list-style-type: none"> • Software functions of fuel consumption-relevant vehicle systems must be designed in such a way that they ensure the protection of health and the environment.
Importance/priority	<ul style="list-style-type: none"> • The consumption-influencing effect of a software function must be designed in such a way that it is proportionate to the customer benefit (comfort and performance requirements).
Test/cycle detection	<ul style="list-style-type: none"> • Software functions must be designed independently of test cycles and the dynamometer and no direct or indirect detection of test conditions must be made.¹ • No switch to other operating modes may occur based on the recognition of test boundary conditions.
Physical orientation	<ul style="list-style-type: none"> • A change of the operating strategy through software functions is only permitted if it is physically justifiable, appropriate and energetically reasonable. • Software functions must be designed in such a way that counters, timers (e.g. time after engine start), integrated parameters, memory elements or other parameters with potential test cycle relevance are only used for absolutely necessary and justifiable changes in system behavior - if necessary, consult certification and technical compliance departments before application.
Reversibility	<ul style="list-style-type: none"> • Software functions must, as far as technically possible, be reversible with regard to activation and deactivation conditions.
Normal operating conditions	<ul style="list-style-type: none"> • Software functions must be designed in such a way that the effect of CO2 measures under real driving conditions impact the full use of energy. • Consumption-increasing software functions are only permitted under specified exceptions.²
Documentation	<ul style="list-style-type: none"> • Certification-relevant documents must be correct, clear and complete and adhere to all legal requirements.

1. special conditions apply to functions that use the dyno mode - these must be coordinated with certification and technical compliance prior to software implementation

2. To clarify exceptions, consultation with certification and technical compliance required

Technical compliance principles for Noise

Protection of health and the environment	<ul style="list-style-type: none"> • Software functions of noise-relevant vehicle systems must be designed to ensure the protection of health and the environment.
Importance/priority	<ul style="list-style-type: none"> • Software functions must meet the legal requirements for noise emissions without causing other mandatory requirements (such as OBD or emissions) not to be met. This must be ensured, even if it is at the expense of comfort or performance requirements.
Test recognition	<ul style="list-style-type: none"> • Software functions must be designed with regard to the real driving operation and no detection of test boundary conditions must be made.
Physical orientation	<ul style="list-style-type: none"> • Software functions must be developed and designed based on physical dimensions.
Reversibility	<ul style="list-style-type: none"> • Software functions must, as far as technically possible, be reversible with regard to activation and deactivation conditions.
Modes of operation	<ul style="list-style-type: none"> • Software functions must be designed in such a way that the vehicle complies with the relevant certification values in all operating modes - potential deviations must be coordinated with certification and technical compliance.
Noise modulations	<ul style="list-style-type: none"> • Noise modulations¹ (e.g. by actuators) are only permitted if they do not increase the overall noise level².
Partial sound sources	<ul style="list-style-type: none"> • Impacts on the exhaust pipe noise must be considered³ to meet noise requirements.
Documentation	<ul style="list-style-type: none"> • Certification-relevant documents must be correct, clear and complete and adhere to all legal requirements.

1. special requirements apply to vehicles which can drive purely electrically

2. consideration of the new version of ECE R51.03, extension status 01.10.2018 (currently in progress) 3. see ["Corporate Audit BR167 - Certification External Noise - V1.1"]

Technical compliance principles for Emission-relevant software functions (1/2)

Protection of health and the environment

- Software functions of emission-relevant vehicle systems must be designed in such a way that they ensure the **protection of health and the environment**.

Importance/priority

- Software functions must **meet the legal requirements for emissions** without causing other mandatory requirements (such as OBD or noise emissions) not to be met. This must be ensured, even if it is at the **expense of comfort or performance requirements**.

Test/cycle detection

- Software functions must be designed to be **independent of test cycles and the dynamometer** and **no direct or indirect detection of test boundary conditions must be made**.¹

Physical orientation

- Software functions must be developed and designed **based on physics**
- Software functions must be designed in such a way that **counters, timers** (e.g. time after engine start), **integrated parameters, memory elements** or other parameters with potential test cycle relevance are only used for **absolutely necessary and justifiable** changes in system behavior - if necessary, consult certification and technical compliance departments before application.

1. special conditions apply to functions that use the dyno mode - these must be coordinated with certification and technical compliance prior to software changes

Technical compliance principles for Emission-relevant software functions (2/2)

Reversibility

- Software functions must, as far as technically possible, be **reversible** with regard to activation and deactivation conditions, so that, for example, switching back and forth between different operating modes is ensured.

Normal operating conditions

- Software functions must be designed in such a way that the **effects** of the measures **are physically reasonable and justifiable**.

Documentation

- **Certification-relevant documents** must be **correct, clear and complete and adhere to all legal requirements**.
- Possible **effects of software changes on certification-relevant documentation** are to be considered and adjustments in the corresponding documents are to be made and coordinated with the certification in the run-up to the software implementation.
- Software functions, including their calibration, must be **logically comprehensible** for an expert third party.
- For software functions for which admissibility is justified on the basis of their occurrence in legally prescribed test procedures, **evidence** must be available in the form of **test data** or **engineering justifications**.

Software compliance must be considered in five dimensions

Category	 Information security	 Product safety	 Environmental compliance	 Intellectual Property	 Product conformity
Objectives	Ensuring confidentiality, integrity and availability of information	Ensuring that only safe products are placed on the market	Ensuring that regulatory and internal environmental protection requirements are met	Ensuring lawful use and prevent risks from infringement of software-relevant property rights	Ensuring the fulfillment of customer expectations for functions & features
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			Emissions	Trade secrets	

Technical compliance principles for software-relevant Intellectual property rights (1/2)

Technical property rights (patents)¹

- Software functions must be designed in such a way that **no patents of third parties are infringed**. Therefore, it is important to avoid in particular:
 - The **systematic reconstruction or imitation** of patent-protected ideas and algorithms.
 - The implementation of the SW requirements **without questioning** if the idea to be implemented or the algorithm is **protected by patent**.
 - The use of **patents essential to standards** without questioning authorization.

Software-specific copyrights

- Software functions must be designed in such a way that **no copyrights of third parties are infringed**. Therefore, it is important to avoid in particular:
 - **Copying, modifying, distributing, licensing or selling** software without copyright permission (e.g. third-party frameworks from internet portals).
 - The systematic **reconstruction or imitation** of software, e.g. by unauthorized translation of the code into another programming language.
 - The **use of open source software** and firmware without adherence to the corresponding license conditions.
 - The **use of software with a strong copyleft** (e.g. General Public License), as this implies the obligation to publish Daimler's own software.
 - The use of software whose licenses **do not allow** for a **holistic understanding of the software**, since only individual components can be accessed.

1. for questions regarding these categories please contact Daimler Brand & IP Management GmbH

Technical compliance principles for software-relevant Intellectual property rights (2/2)

Non-technical property rights (trademarks, designs, domains)¹

- Software functions must be designed in such a way that no **non-technical property rights (trademarks, designs, domains) of third parties are infringed**. Therefore, it is important to avoid in particular:
 - The use of **brand names, words including personal names, illustrations, fonts and sound signs**, without taking their trademark protection into account.
 - The naming of functionalities, ideas, services etc. without checking the **naming for trademark rights of third parties**.

Trade secrets

- Software functions must be designed in such a way that no **trade secrets of third parties are infringed** and that no **trade secrets of Daimler are disclosed to third parties**. Therefore, it is important to avoid in particular:
 - The **insufficient protection** (e.g. lack of encryption, insufficient storage concepts) of **third-party software and data** used in course of collaborations.
 - The disregard of **contractual conditions** agreed with third parties, in particular confidentiality agreements (e.g. code may be used and changed internally, but disclosure may be prohibited).
 - The **insufficient protection** (e.g. lack of encryption, insufficient storage concepts) of **internal software** and data classified as trade secrets.

1. for questions regarding these categories please contact Daimler Brand & IP Management GmbH

Software compliance must be considered in five dimensions

Category	Information security	Product safety	Environmental compliance	Intellectual Property	Product conformity
Objectives	Ensuring confidentiality, integrity and availability of information	Ensuring that only safe products are placed on the market	Ensuring that regulatory and internal environmental protection requirements are met	Ensuring lawful use and prevent risks from infringement of software-relevant property rights	Ensuring the fulfillment of customer expectations for functions & features
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		Emissions	Trade secrets		

Technical compliance principles for

Consistency of information

Single point of truth

- Software functions must be designed in such a way that a source is defined for data of the same meaning used several times. In case functions use copies of this data it is to ensure that **regular updating** with the source at technically reasonable intervals is done.

Consistency across multiple touchpoints

- Software functions must be designed in such a way that information made available **through various touchpoints** (vehicle, app, Daimler-portal) has the best possible **consistency** (e.g. information that is sent to an authority due to legal requirements must correspond as closely as possible with the information displayed in the vehicle).
- Software functions must be designed in such a way that information provided to the user by **various displays in the vehicle is as consistent** as possible (e.g. the speed digit on the main speedometer must not differ from the reading of the digitally displayed tube speedometer).

Information for use

- Software functions are to be designed in such a way that all information displayed to the user is oriented as closely as possible to the **real facts and values** based on his driving behavior.

Technical compliance principles regarding the Congruence of advertised & actual functions

Changes to functions already advertised	<ul style="list-style-type: none">• Changes of already publicly advertised software functions are to be communicated by the SW developer accordingly.
Quality	<ul style="list-style-type: none">• Software functions must be designed in such a way that they correspond to the advertised functions/performance at the time of publication and fulfil the advertised advantages.
Regular operation	<ul style="list-style-type: none">• Software functions must be designed to achieve expected results under real driving conditions and not only under certain conditions (e.g. tests).
Unexpected results	<ul style="list-style-type: none">• Software functions must always be designed in such a way that no unexpected results occur for the user.

DAIMLER

ATTACHMENT E

DAIMLER

Corporate Audit Charter

Preamble

The reputation of Daimler AG as a company is built upon solid ethical conduct with an environment of effective internal control systems which comply with applicable laws, regulations and policies. Embedded in the corporate governance model of the company, Corporate Audit assists the Board of Management of the Daimler AG to accomplish this task.

This charter describes Daimler Group's Corporate Audit mission, independence and objectivity, scope and responsibilities, authority, accountability, and standards.

Stuttgart, December 16, 2019

SIGNATURES REDACTED

Table of Contents

01 Mission	4
02 Scope of Work	5
03 Accountability	6
04 Independence	7
05 Responsibility	8
06 Authority and Right to Information	9
07 Corporate Audit and External Auditors	10
08 Audit Standards	11

Mission

01 Corporate Audit is an independent and objective assurance and advisory function of the Daimler Group. Corporate Audit supports the optimization of the company's risk exposure and assesses internal controls and processes regarding:

- » Compliance with applicable laws and regulations
- » Compliance with internal and external policies and guidelines
- » Safeguarding of corporate assets
- » Reliability of internal and external reporting
- » Effectiveness and efficiency of operations and administration

Corporate Audit assists the organization in accomplishing its objectives by bringing a systematic, disciplined approach to evaluating and improving the effectiveness of risk management, internal control, and governance processes.

Corporate Audit contributes to the qualification and development of employees for management positions within the Daimler Group.

Scope of Work

02

The provisions set forth in this internal audit charter apply to Daimler AG and all direct and indirect controlled shareholdings.

Corporate Audit's influence is comprehensive and relevant to all units, functions, locations, processes, and projects worldwide. This includes the audit of dealers and suppliers whenever it is deemed necessary.

Audit activities at non-controlled shareholdings may be performed based on approvals from their respective supervisory authorities.

The overall objective of Corporate Audit's activities is to determine whether the organization's network of risk management, internal control, and governance processes designed and represented by management is adequate and functioning in a manner to ensure that:

» Risks are appropriately identified and managed including the risk of fraud. It cannot be ensured that all fraudulent activities are detected, regardless of proper and compliant audit work.

» Operations work efficiently

» Interaction with various governance groups occurs as needed

» Significant financial, managerial, and operating disclosures are accurate, reliable, and timely

» Management and staff actions are compliant with policies, guidelines, standards, procedures, applicable laws and regulations

» Resources are acquired economically, used efficiently, and are adequately safeguarded

» Programs, plans, and objectives are accomplished

» Quality and continuous improvement are cultivated throughout the organization's control processes

» Significant legislative or regulatory issues impacting the organization are recognized and addressed appropriately

Additionally, opportunities to improve upon management's control, profitability, and the overall image of the organization will be recognized during audit activities and investigations. These observations will be communicated to the responsible level of management.

Concerning Risk Management, the Corporate Audit activity will assist the organization by identifying and evaluating significant exposures to risk and contributing to the improvement of risk management and control systems.

Accountability

03 The Head of Corporate Audit in the discharge of his/her duties is accountable to Daimler AG's Board of Management and the Audit Committee to:

- » Provide an annual assessment regarding the adequacy and effectiveness of the organization's processes for controlling its activities and managing the risks in the areas set forth under the mission and scope of work.
- » Report significant concerns related to internal controls and corporate governance processes for both the organization and its affiliates which include providing potential improvements and transparent information pertaining to all concerns.
- » Provide periodic updates on the status and results of the annual audit plan on important internal audit activities and the appropriateness of department resources.
- » Coordinate effectively with other control and monitoring functions (e.g. controlling, risk management, compliance, security, legal, external audit).

Independence

04

The Head of Corporate Audit will report disciplinarily and functionally to the member of the Board of Management for Integrity and Legal Affairs. In addition, the Head of Corporate Audit reports to Daimler AG's Chairman of the Board of Management, the Daimler AG Board of Management and periodically to the Audit Committee in accordance with the previous section "Accountability".

Corporate Audit does not perform operational duties. Corporate Audit personnel do not assume responsibilities in business operations and do not perform audit activities where their independence could be compromised. Employees who transfer from operational units to Corporate Audit are subject to a cooling-off period to ensure objectivity.

Responsibility

05

The Head of Corporate Audit and Corporate Audit staff are responsible to:

- » Develop a flexible annual audit plan using an appropriate risk-based methodology including the risk and control related concerns that have been identified by management and Corporate Audit. This plan will be submitted to the Board of Management and Audit Committee of the Daimler AG and the related companies (Mercedes-Benz AG, Daimler Truck AG, Daimler Mobility AG) for their review and approval. Periodically, these parties will be presented with comprehensive updates.
 - » Implement the approved annual audit plan which may include, as appropriate, special tasks or projects requested by the Board of Management and/or the Audit Committee of the Daimler AG and the related companies.
 - » Maintain professional audit and investigation staff with sufficient knowledge, skills, experience, and professional certifications to meet the requirements of this charter.
 - » Establish a quality assurance program that ensures the reliability and efficiency of internal audit activities.
 - » Issue periodic reports summarizing the results of audit and investigation activities to the Board of Management and Audit Committee of the Daimler AG and the related companies.
- » Perform advisory services, beyond assurance services, to assist management in ascertaining their objectives.
 - » Keep the Board of Management and Audit Committee of the Daimler AG and the related companies apprised of emerging trends and successful methods in the practice of internal auditing.
 - » Perform investigation of allegations or complaints upon request of the Business Practices Office or Senior Management.
 - » Consider the scope of external auditors and regulators in the correlating purpose of providing optimal audit coverage for Daimler AG at a reasonable cumulative cost.
 - » Evaluate and assess significant functional changes, new or changing services, operational or control processes coincident with their development, implementation, and expansion.

Authority and right to information

06

The Head of Corporate Audit and the Corporate Audit staff derive their authority from the Daimler AG Board of Management.

These rights shall only be exercised within the scope of the audit tasks as approved by the Board of Management of the Daimler AG.

In order to execute its duties, Corporate Audit is authorized to:

Corporate Audit will receive all relevant information from management regarding significant occurrences, decisions, and strategic plans which are necessary for achieving its objectives.

- » Have unrestricted access to all functions, records, property and personnel under consideration of data protection regulations with respect to personal data.
- » Have direct and unrestricted access to the Audit Committee and the Supervisory Board of the Daimler AG and the Supervisory Boards of the related companies.
- » Allocate resources, set frequencies, select subjects, establish scopes of work, and apply the techniques necessary to accomplish audit objectives.
- » Obtain the necessary assistance from personnel in units of the organization where they perform audits and investigations as well as other specialized services from within or outside the organization.

Corporate Audit and External Auditors

07

In addition to the year-end audits, other audits are performed by external parties, e.g. financial or tax authorities. To ensure efficient and effective internal audit work, Corporate Audit will consider the results of these external audits and will include them into their own work.

A copy of audit results and reports as well as management letters from external auditors (e.g. year-end auditors, finance authorities, customs, social security authorities) will be provided to Corporate Audit in a timely and complete manner by the relevant local management.

In contrast to the function of external auditors, Corporate Audit is an instrument of the Board of Management of the Daimler AG. The purpose of which is to assist the Board of Management in their obligation to supervise the group's risk and control framework as well as the compliance and efficiency of the business operations of the Daimler AG.

Cooperation between Corporate Audit and the external auditor must be considered to encourage efficiency and information sharing aspects. Internal audit results will be utilized by the external auditor where appropriate to avoid unnecessary or duplicate audit procedures or activities. The external auditor and Corporate Audit shall periodically discuss audit planning and share audit results.

Audit Standards

08

Corporate Audit's activities will meet

» the International Professional Practices Framework (IPPF) of the Institute of Internal Auditors (IIA), including the Core Principles for the Professional Practice of Internal Auditing, the Definition of Internal Auditing, the Code of Ethics and the International Standards for the Professional Practice of Internal Auditing

» the standards of the Deutsches Institut für Interne Revision (DIIR) and

» those of the Association of Certified Fraud Examiners (ACFE).

All activities will further be compliant with Daimler AG's principles as stated in the Integrity Code and the principles of social responsibility.

Contact:

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APPENDIX E

Corporate Compliance: Information and Parameters Reported for Gasoline Vehicles Prior to Certification

Emissions Constituents

CO (ppm)
NO (ppm)
NO₂ (ppm)
NO_x (ppm)
CO₂ (ppm)
CO₂ (%)
CH₄ (ppm)
THC (ppm)
NMHC (ppm)
O₂ (%)

Vehicle Parameters

Engine speed (rpm)
Engine torque (ft lb)
Coolant temperature (F)
Oil temperature (F)
Exh mass flow (g/s)
Exh volume flow (ft³/min)
Exh temperature (F)
Lambda (ratio)
Velocity (mph)
Fuel rate (g/s)
Ignition Timing Advance (degrees)
Pedal Position (%)
Fuel System Fuel Trim
Long Term Fuel Trim

Environmental Parameters

Ambient temp (F)
Ambient pressure (psi)
Relative Humidity (%RH)
Absolute Humidity (grain/lb)
Correction factor NO_x Ambient conditions (ratio)
Correction factor dry/wet (ratio)
Latitude (deg)
Longitude (deg)
Altitude (ft)
Number of GPS satellite links