

Mail-Out #ECARS 19-05

To: All Interested Parties  
Date: October 7, 2019  
Subject: GUIDANCE FOR HEAVY-DUTY ON-BOARD DIAGNOSTIC (HD OBD) SYSTEM  
CERTIFICATION DOCUMENTATION AND RUNNING CHANGE/FIELD FIX  
DOCUMENTS SUBMITTED TO THE CALIFORNIA AIR RESOURCES BOARD  
DOCUMENT MANAGEMENT SYSTEM

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This guidance applies to manufacturers of heavy-duty vehicles and engines subject to California's heavy-duty on-board diagnostic (HD OBD) system regulation (title 13, California Code of Regulations (CCR) section 1971.1).

#### Certification Documentation

Title 13, CCR section 1971.1(j) requires manufacturers to submit specific information regarding HD OBD systems to the California Air Resources Board (CARB) as part of the certification process for HD OBD systems. Manufacturers should electronically submit such HD OBD certification documentation through CARB's Electronic Document Management System (DMS). CARB's DMS homepage is accessed through the following website via the ARB\_OBD domain: <https://www.arb.ca.gov/msprog/dms/dms.htm>. The website includes details regarding how to obtain manufacturer user accounts and provides tutorials, fact sheets, and user guides on how to use the CARB DMS. For additional assistance not covered on the homepage, please contact the individual domain administrator listed on the homepage.

To expedite the HD OBD system certification review process, staff has developed guidelines and templates for the information required to be included in the certification documentation. These guidelines/templates are intended to ensure that manufacturers have provided pertinent information in the application and to help staff quickly identify the relevant information when reviewing an HD OBD system for compliance. Where applicable, the HD OBD system certification information shall be submitted in accordance with these templates. Manufacturers seeking certification must begin submitting the information and name the DMS electronic files/workflows in the formats described in Attachments A through C of this mail-out beginning January 1, 2020.

Manufacturers that are unable to start submitting the required information in the provided guidelines and templates beginning January 1, 2020 must timely notify staff, and must further endeavor to utilize the guidelines and templates as soon as possible.

Attachment A, designated the "HD OBD System Certification 'A-S' Document," is the primary document that CARB staff will rely on when reviewing HD OBD systems. This document must be provided in portable document format (PDF), and must include the information as specified in the HD OBD regulation sections listed below. Manufacturers must submit the information required by sections 1971.1(j)(2.1) and (j)(2.3) (the monitoring strategy descriptions and flowcharts) as separate documents from the "HD OBD System Certification 'A-S' Document."

- A. Cover Letter (sections 1971.1(j)(2.16), (2.20), (2.21))
- B. Checklist (section 1971.1(j)(2.17))
- C. Summary Table (section 1971.1(j)(2.2))
- D. Durability Demonstration Engine (DDE) Data (section 1971.1(j)(2.4))
- E. Misfire Catalyst Damage, Disablement and Detection Charts, Probability of Detection (POD) Charts (sections 1971.1(j)(2.5), (2.6))
- F. Applicable Test Cycle, Emission Threshold Monitor Data and Adjustment Factors (sections 1971.1(j)(2.7), (2.30))
- G. Input Output Signals List (section 1971.1(j)(2.8))
- H. Closed Loop/Feedback Descriptions (section 1971.1(j)(2.9))
- I. Diagnostic Link Connector (DLC) Location and Connector Picture (section 1971.1(j)(2.11))
- J. Crankcase Ventilation (CV) System Description (section 1971.1(j)(2.12))
- K. Auxiliary Emission Control Device (AECD) and Emission Increasing AECD (EI-AECD) Descriptions (section 1971.1(j)(2.13))
- L. NO<sub>x</sub> and PM Not-To-Exceed (NTE) Carve-Out (section 1971.1(j)(2.14))
- M. Standardization Data (sections 1971.1(j)(2.10), (2.18), (2.19))
- N. Non-OBD Components (section 1971.1(j)(2.29))
- O. Inducement Strategies Descriptions (section 1971.1(j)(2.27))
- P. Engine Purchaser/Chassis Manufacturer Build Specifications and Agreements (section 1971.1(j)(2.15))
- Q. Cold Start Emission Reduction Strategy (CSERS) Information (section 1971.1(j)(2.22))
- R. NO<sub>x</sub> Sensor Information (section 1971.1(j)(2.24))
- S. Other Certification Documentation Information (sections 1971.1(j)(2.23), (2.25), (2.26), (2.28), (2.31), (2.32), (2.33), (2.34), (2.35))

Manufacturers must insert a bookmark for each section into this document, and must name each bookmark using the bookmark titles shown in Attachment A (e.g., use "Cover Letter" for the bookmark name for section A, use "CV System Description" for the bookmark name for section J). For some sections, staff has provided examples of how the specific information shall be formatted and presented. Staff believes that the format created for each example in Attachment A will make it easier for staff to review and evaluate submitted applications. Any variation from the format must be approved by CARB before certification material is submitted. Staff will approve variations if the proposed format provides for clear and comprehensive review of the information by CARB staff. It is to the manufacturers'

benefit to include clear, accurate, and complete information for each section in order to help expedite the HD OBD system review process.

Attachment B, designated the "OBD DMS File-Naming Convention Document," describes the required naming convention of the electronic files submitted by manufacturers through DMS, including files related to both pre- and post-HD OBD system certification. This document lists the types of files required to be submitted and the prescribed method for naming each file. Similarly, Attachment C, designated the "OBD DMS Workflow-Naming Convention Document," describes the required naming conventions for the workflows manufacturers input through DMS. By having every manufacturer use the same naming convention for bookmarks, files, and workflows, staff will be able to more quickly locate information when reviewing HD OBD applications.

#### Running Change and Field Fix Documentation

Title 13, CCR section 1971.1(m) requires manufacturers to submit information related to running changes and field fixes for heavy-duty engines to CARB. Manufacturers should electronically submit such information through CARB's DMS. To expedite the HD OBD system running change and field fix review process, staff has developed guidelines for the information required to be included in running change and field fix documentation. These guidelines are intended to ensure that manufacturers have provided sufficient pertinent information in the documentation and to aid staff in identifying and analyzing the relevant information when reviewing a running change or field fix document for compliance. Where applicable, the running change and field fix documentation must be submitted in accordance with these guidelines. Manufacturers with running changes and/or field fixes must submit the information and name the DMS electronic files/workflows in the formats described in Attachments A through D of this mail-out beginning January 1, 2020.

Manufacturers must notify CARB prior to or concurrently with submitting running change or field fix documentation. This must be in the form of a running change/field fix notification or a running change/field fix document. The running change/field fix notification shall consist of a brief description of the running change or field fix, and shall be submitted via email to CARB staff assigned to review the manufacturer's HD OBD application. See Attachment D, designated "Running Change/Field Fix Examples," for an example. The running change/field fix document is more detailed, and is the main source of information that CARB staff will rely on when reviewing running changes or field fixes for HD OBD systems. This document must be provided in PDF format and must include all of the applicable information listed below:

- A detailed description of the running change and/or field fix – this shall include, but is not limited to, the following:
  - The reason for implementing the running change and/or field fix;
  - The portion (e.g., models, ratings, vocations) of the product line that is affected by the change, including information sufficient to identify any given in-use engine targeted by

the change (i.e., in-use engines that have received or are eligible to receive the field fix); and

- A description of any impact of the running change/field fix on emissions and/or OBD system performance (e.g., emission test results, monitoring capability, in-use monitor performance ratio data), including any test data determined to be necessary to demonstrate compliance with title 13, CCR section 1971.1.
- A summary report for each engine family that describes all running changes and/or field fixes that have been incorporated since certification.
- HD OBD application pages that are revised due to the running change and/or field fix.
  - Manufacturers should limit documentation only to the areas of the application affected by the running change and/or field fix.
  - Changes to text on the application pages must be identified by using strikeouts to designate deletions and highlights to designate additions. Changes to pictures or diagrams must be noted in such a way to make the change(s) easily identifiable by CARB staff. For durability demonstration engines/vehicles (DDE/DDV) tested under section 1971.1(i), if the running change/field fix results in new DDE/DDV test data, the document must include both the original data that were made available for the original OBD system certification and the new data. See Attachment D for examples.
- Service manual information that are revised due to the running change and/or field fix.
  - Manufacturers should limit documentation to the areas of the service manual affected by the running change and/or field fix.
  - Changes to text in the service manual must be identified by using strikeouts to designate deletions and highlights to designate additions. Changes to pictures or diagrams must be noted in such a way to make the change(s) easily identifiable by CARB staff.
- Technical service bulletins that are or will be issued as a result of the running change and/or field fix.

Manufacturers interested in receiving emails related to future changes to the OBD program are invited to subscribe to the On-Board Diagnostics Program list at the following website:

[https://public.govdelivery.com/accounts/CARB/subscriber/new?topic\\_id=obdprog](https://public.govdelivery.com/accounts/CARB/subscriber/new?topic_id=obdprog).

Manufacturers interested in receiving future emails regarding DMS status and updates may subscribe to the Certification Document Management System list at the following website:

[https://public.govdelivery.com/accounts/CARB/subscriber/new?topic\\_id=dms](https://public.govdelivery.com/accounts/CARB/subscriber/new?topic_id=dms). By signing up for these topics, subscribers will receive a notice whenever changes are made to the CARB OBD program website or DMS.

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Questions regarding this guidance may be directed to Jason Wong, Manager, OBD Program Development Section at (626) 575-6838, or [jason.wong@arb.ca.gov](mailto:jason.wong@arb.ca.gov).

Sincerely,



Allen Lyons, Chief  
Emissions Certification and Compliance Division

Attachment A: HD OBD System Certification 'A-S' Document  
B: OBD DMS File-Naming Convention Document  
C: OBD DMS Workflow-Naming Convention Document  
D: Running Change/Field Fix Examples

cc: Jason Wong, Manager  
OBD Program Development Section