



HDIUT Data Submittal Workshop

For Heavy Duty In-Use Testing (HDIUT) Program

Date: June 20, 2024

Objectives

- Introduction of Heavy Duty In-Use Testing (HDIUT) data submittal portal, HDIUT Manufacturer Submit (HMS) system
 - Applicable to heavy duty engine manufacturers (OEMs) HDIUT program
 - Implementation date: July 1, 2024
 - ☐ With CARB staff-assisted submission options (until December 31, 2024)
- Step-by-step guidance how to submit HDIUT data through HMS
 - (One time) Registration
 - HDIUT data (file) submittal, followed by notification
 - HDIUT data validation, followed by notification
- Q&A with the new submission methodology

Background

- Manufacturer-Run In-Use Testing Program for Heavy-Duty Diesel Engines (HDIUT Program) started from 2007.
 - After 2 years of a pilot program (in 2005 and 2006)
- According to 40 CFR § 86.1920 “What in-use testing information must I report to EPA?” along with an EPA’s HDIUT reporting guidance document (CISD-06-011), OEMs must report HDIUT data, information, and results (HDIUT data) to U.S. EPA and CARB.
- Current methodology for OEMs’ HDIUT data reporting/submittal
 - To U.S. EPA: Through EV-CIS
 - To CARB: Electronic media (such as CD, DVD, and thumb drives) by mail or email attachments

New HDIUT Data Submittal Methodology

- Establishment of a new HDIUT data reporting/validation system
 - Similar to EPA's EV-CIS and CARB E-File
 - Web-based reporting through a submittal portal at HMS:
<https://ssl.arb.ca.gov/hms>
 - Additional HDIUT data validation in place
- New HDIUT data submittal through HMS
 - For 2023 and later Test Order (TO) HDIUT data, starting from July 1, 2024
 - ❑ OEM's direct submission through HMS
 - ❑ CARB staff-assisted submission to HMS by December 31, 2024
 - OEM's submission to CARB via current/old methodology
 - CARB staff's submission through HMS on behalf of the OEM
 - Any errors found during the submission through HMS are fixed by the OEM

New HDIUT Data Submittal Methodology (continued)

- New HDIUT data submittal steps
 - Send CARB an official HMS account request letter.
 - Expect to receive email(s) for detailed registration process.
 - Follow the process in the email(s).
 - ❑ One time registration/approval for the person(s) who submit(s) HDIUT data unless there are changes for the person(s)
 - Once approved, submit/upload HDIUT data (files) by the person(s) at HMS: <https://ssl.arb.ca.gov/hms>
 - Upon successful submission/uploads, receipt of successful submittal/upload notification
 - ❑ When HDIUT data contain errors, receipt of unsuccessful submittal/upload notification
 - ❑ Then, after addressing those errors, re-submit/re-upload.

HDIUT Data Submittal - HMS Account Request

- Each OEM submits CARB an HMS account request (HMS-AR) letter
 - To In-Use Programs Branch Chief
 - With providing names, titles, and contact information, including email addresses
 - On an official signed letter
- HMS-AR sample letters are available in Mail-Out # ECCD-2024-06
- Additional information on a CARB webpage, How to Use HMS

John Smith
Company ABC
123 Motor Street
Motor City, MI 12345

July 1, 2024

_____, Chief
In-Use Programs Branch
Emissions Certification and Compliance Division
California Air Resources Board
4001 Iowa Ave.
Riverside, CA 92507

Dear _____,

To report Heavy Duty In-Use Testing (HDIUT) data, Company ABC hereby submits an HDIUT Manufacturer Submit (HMS) account request letter to authorize the HDIUT data submission through the HMS system on behalf of the manufacturer for the following list of contacts.

Company ABC attests that all HDIUT data on behalf of the manufacturer will be reviewed, approved, and submitted through the HMS system by the primary authorized contact, John Smith, or additional authorized contacts that are not consultants. In addition, Company ABC attests that all electronic signatures in this letter are to be considered valid, and all HDIUT data submitted through the HMS system will be considered valid for in-use compliance.

	Mary Garcia	Marty Johnson	David Hernandez
Name:	Mary Garcia	Marty Johnson	David Hernandez
Title:	Senior Engineer	Technical Lead	Engineer I
Company:	Company ABC	Company ABC	Company ABC
Phone:	(123) 456-7890	(123) 456-7887	(123) 456-7895
Email:	mary.garcia@abc.com	marty.johnson@abc.com	david.hernandez@abc.com

If you have any questions regarding this letter, please contact me at (123) 456-7878 or john.smith@abc.com.

Sincerely,

John Smith

John Smith, Chief
In-Use Compliance Division
Company ABC

HDIUT Data Submittal - Registration Notification Emails

- The first email

Welcome to CARB!

Hi John Doe

CARB is using Okta to manage its web applications. This means you can conveniently access CARB applications through a single, secure home page.

Your system administrator has created a user account for you
Click the following link to activate your account:

[Activate CARB Account](#)

This link expires in 7 days.

Your username is [your email address](#)
Your organization's sign-in page is <https://login.arb.ca.gov>

If you experience difficulties accessing your account, you can send a help request to your system administrator using the following email address:
oktasupport@arb.ca.gov

- The second email

HDIUT Manufacturer Submit (HMS): Account creation  

SC_DoNotReply@arb.ca.gov May 21, 2024, 1:37 PM    

to me ▾

tstngagn111@gmail.com,

You have been invited to create an account on HDIUT Manufacturer Submit (HMS). Please follow the link below to create an account:

[HMS Create Account](#)
or
<https://ssl.arb.ca.gov/sce/requestwebaccess/HMS/tstngagn111@gmail.com/>

You will received a seperate email once your account has been activated.
Please DO NOT REPLY to this email.

Note: The link will only valid for one hour

Thank you,
CARB HMS System

HDIUT Data Submittal - Account Approval Notification Email

- The approval email

HDIUT Manufacturer Submit (HMS): Account Approved ➤ 

SC_DoNotReply@arb.ca.gov Nov 3, 2023, 2:45 PM    
to me ▼

John Doe,

Your account on HDIUT Manufacturer Submit (HMS) has been approved and activated. You can start using your credential to login to the site below:

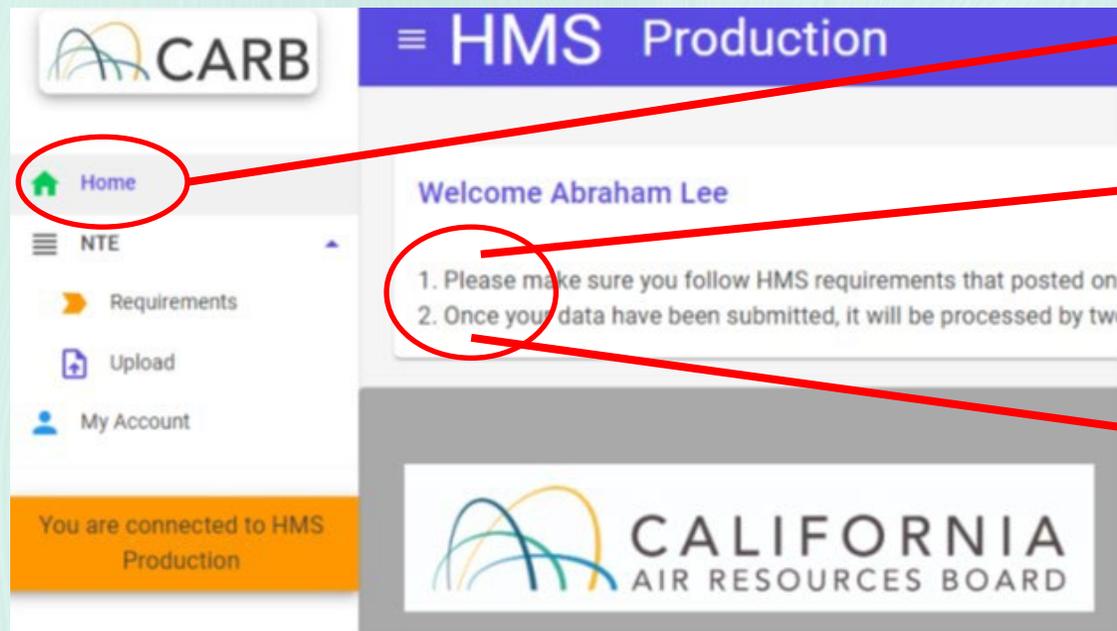
[HMS Login](#)
or
<https://ssl.arb.ca.gov/hms>

For your convinient, please bookmark the site URL for the future use.
Please DO NOT REPLY to this email.

Thank you,
CARB HMS System

Guidance on how to submit HDIUT Data (File) through HMS

HDIUT Data (File) Submission through HMS (Front Page)

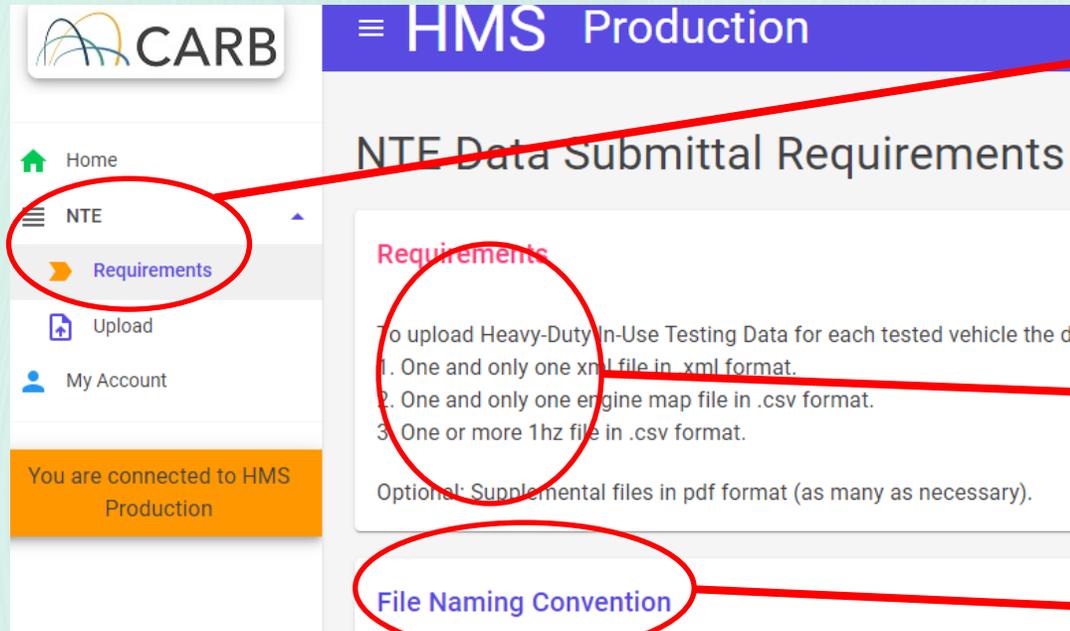


• **Home** (page)

- **Welcome John Doe**

1. Please make sure you **follow HMS requirements** that posted on CARB requirements when uploading HDIUT data.
2. Once your data have been submitted, it will be processed by two different system. So **you will receive two emails**, one for the **file submission** and the other for the **data validation**.

HMS - (NTE) Requirements Page



- **NTE - Requirements** (page)
- **NTE (HDIUT) Data Submittal Requirements**
 - Must contain (only) **one xml file**, (only) **one engine map (csv) file**, and **1 hz** (data csv) **file or files**.
 - Optional supplemental files
- **File Naming Convention**
 - In the next slide

HMS - (HDIUT Data) File Naming Convention

- **ManufacturerCode_ApplicationName_TestOrderYear_TestEngineFamilyName_DataFileType[x]_TestID.Ext**
- **Files Naming Example for one 1HZ file and one supplement file**
 - GCX_HDIUT_TO2024_RGXCH08.383A_XML_ABC1234_A8.xml
 - GCX_HDIUT_TO2024_RGXCH08.383A_EM_ABC1234_A8.csv
 - GCX_HDIUT_TO2024_RGXCH08.383A_1HZ_ABC1234_A8.csv
 - GCX_HDIUT_TO2024_RGXCH08.383A_SUPP_ABC1234_A8.pdf
- **Files Naming Example for multiple 1HZ and supplement files**
 - GCX_HDIUT_TO2024_RGXCH08.383A_XML_ABC1234_A8.xml
 - GCX_HDIUT_TO2024_RGXCH08.383A_EM_ABC1234_A8.csv
 - GCX_HDIUT_TO2024_RGXCH08.383A_1HZ1_ABC1234_A8.csv
 - GCX_HDIUT_TO2024_RGXCH08.383A_1HZ2_ABC1234_A8.csv
 - GCX_HDIUT_TO2024_RGXCH08.383A_SUPP1_ABC1234_A8.pdf
 - GCX_HDIUT_TO2024_RGXCH08.383A_SUPP2_ABC1234_A8.pdf

Details

- ManufacturerCode is a unique, three character alphanumeric code
- ApplicationName is **HDIUT**
- TestOrderYear is a six character code
- TestEngineFamilyName is a twelve character alphanumeric code
- DataFileType is the data file type such as
 - For xml file use **XML**
 - For engine map file use **EM**
 - For 1hz file use **1HZ**
 - For supplement file use **SUPP**
- [x] is attachment number of the same file type. please use the number sequentially starting from 1
- TestID is a test ID assigned by the manufacturer
- .Ext is the file extension such as
 - For xml file, use **.xml**
 - For engine map file, use **.csv**
 - For 1hz file, use **.csv**
 - For supplement file, use **.pdf**

HMS - (NTE) Upload Page

CARB HMS Production Hello, Lee, Abraham@ARB! | LOG OUT

Home
NTE
Requirements
Upload
My Account

You are connected to HMS Production

NTE Upload

Readme

To upload your files, please follow these steps:

1. Read and follow [CARB requirements](#).
2. Select Data Version from the combobox (original or revision).
3. Click the "Start Upload" button to start to upload the files.
4. Upload one file at a time.
5. Once the files have been uploaded, they cannot be removed and will be part of submittal. To redo the submission, please click the "Cancel Upload" button and start over.
6. After file uploads, **click the "Complete" button**. Otherwise your files will not be processed, and any uploaded files will be deleted from the system.
7. Upon the successful upload, uploaded files will be validated according to the current EPA HDIUT data reporting requirement [evcis-hdiu-data-req-36-0-2024-04.xlsx](#) published in April 2024.
8. A validation notification email will be sent out after the validation.

Note: "Cancel Upload" button is to start over your submission from the beginning.

Upload

Data version
Original

START UPLOAD COMPLETE CANCEL UPLOAD

HMS - (NTE) Upload Page (continued)

The screenshot shows the HMS Production interface. At the top left is the CARB logo. The main header is blue with 'HMS Production' and a user profile 'Hello, Lee, Abraham@ARBI' with a 'LOG OUT' button. A left sidebar contains navigation links: Home, NTE, Requirements, Upload (circled in red), and My Account. Below the sidebar is a status bar: 'You are connected to HMS Production'. The main content area is titled 'NTE Upload' (circled in red) and contains a 'Readme' section with instructions. A purple arrow points from the text 'Data Validation Notes' to step 7 of the instructions. Below the instructions is an 'Upload' section with a 'Data version' dropdown menu set to 'Original' (circled in green). At the bottom right are three buttons: 'START UPLOAD' (circled in red), 'COMPLETE', and 'CANCEL UPLOAD'.

Readme

To upload your files, please follow these steps:

1. Read and follow [CARB requirements](#).
2. Select Data Version from the combobox (original or revision).
3. Click the "Start Upload" button to start to upload the files.
4. Upload one file at a time.
5. Once the files have been uploaded, they cannot be removed and will be part of submittal. To redo the submission, please click the "Cancel Upload" button and start over.
6. After file uploads, click the "Complete" button. Otherwise your files will not be processed, and any uploaded files will be deleted from the system.
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8. A validation notification email will be sent out after the validation.

Note: "Cancel Upload" button is to start over your submission from the beginning.

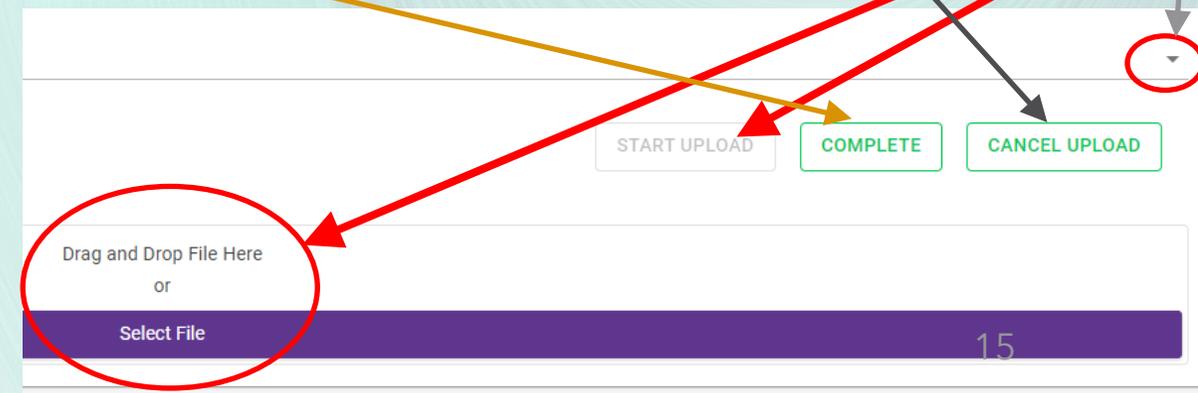
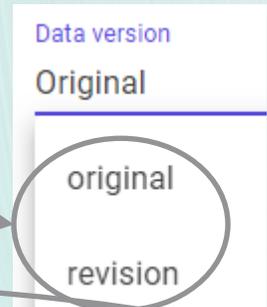
Upload

Data version
Original

START UPLOAD COMPLETE CANCEL UPLOAD

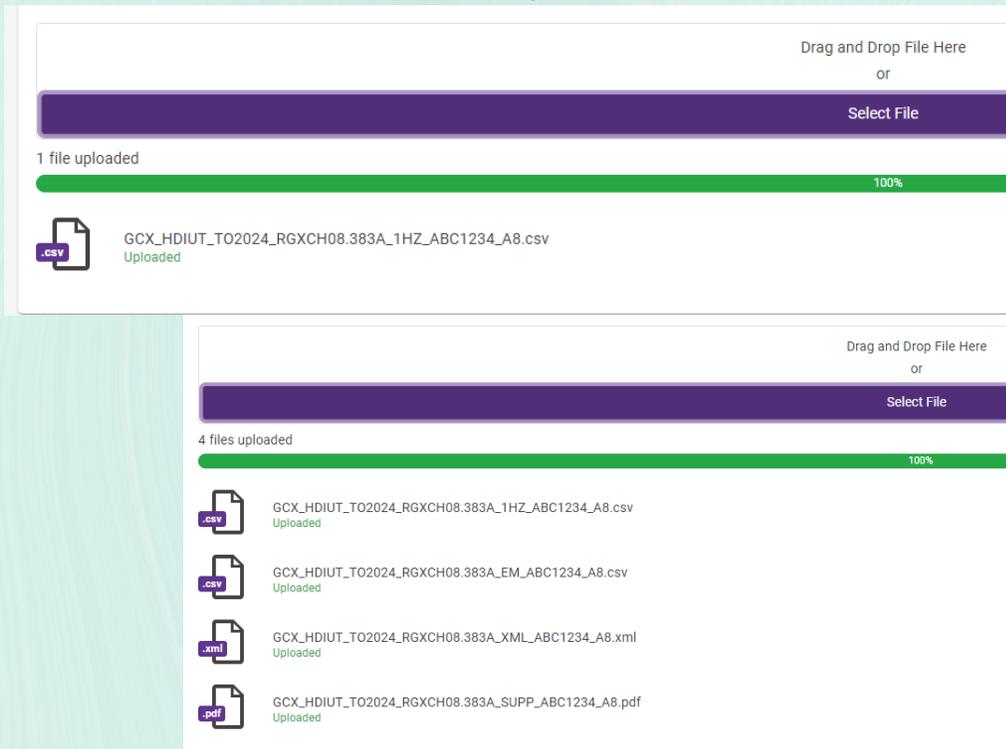
HMS - Upload Page (Read Me - Instruction)

- To upload your files, please follow these steps:
 1. Read and follow [CARB requirements](#).
 2. Select Data Version from the combobox (original or revision)
 - By clicking a down-arrow, ▼ (on the right, circled below)
 3. Click the "Start Upload" button to start to upload the files.
 4. Upload one file at a time.
 5. Once the files have been uploaded, they cannot be removed and will be part of submittal. To redo the submission, please click the "Cancel Upload" button and start over.
 6. After files uploads, click the "Complete" button. Otherwise your files will not be processed, and any uploaded files will be deleted from the system.
- Note: "Cancel Upload" button is to start over your submission from the beginning.



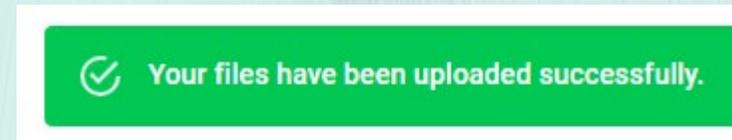
HDIUT Data (File) Submission Example - Successful

- Submission example

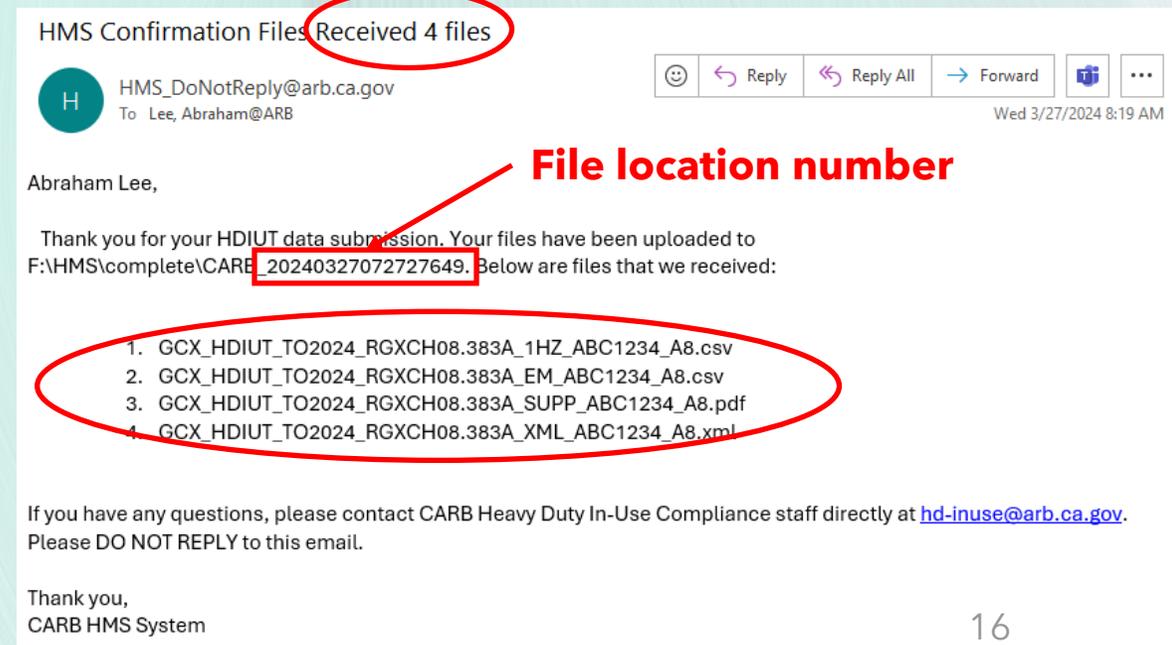


Then, click the "Complete" button

- Successful submission notification
HMS notification



E-mail notification



HDIUT Data (File) Submission Example - Unsuccessful

- Naming convention errors



When errors occur, "Cancel Upload" and start over your submission from the beginning.

- HDIUT data file submission error messages examples (HMS)

- Submission of a fewer number of files.

 Error: Missing require file. Please read HMS requirements.

- Attempt to complete with a file with errors

 Error: Problem with finalizing files. Please contact admin.

Validation of the Submitted HDIUT Data

- Once HDIUT data (files) are successfully submitted, validation is performed by the HDIUT data reporting/validation system
 - Based on EPA's published "Data Requirements for In-use Testing (xlsx)" in April 2024: [System Documentation for Heavy-Duty In-Use Testing Program | US EPA](#)

7. Upon the successful upload, uploaded files will be validated according to the current EPA HDIUT data reporting requirement

8. A validation notification email will be sent out after the validation.

- Examples of Errors checked during the validation
 - Typographical errors: test date for selection date (the date of EPA letter)
 - Missing data/information, when required (not for optional data)
 - ❑ CH₄ concentration, zero/span, and/or drift values missing when CH₄ measurement is indicated (No needs of those values if CH₄ is not measured.)
 - Wrong/Invalid formats
 - ❑ Engine Manufacturer Diagnostic (EMD) code or OBD DTC indicator during the testing (in 1hz file): 0 or 1, instead of the assigned character of "Y" or "N"
 - ❑ Regeneration signals (in 1hz file), recent change: "Y" or "N", instead of 0, 1, or 2 per 40 CFR 86.1370(d)(2) or -1 when they are not available

HDIUT Data Validation Notification

- Successful/Valid HDIUT data submission notification example

Summary results of files from CARB system-- Status: **accepted** - XML Fil...

hdiut-automatic-system@arb.ca.gov
To: CARB Heavy Duty In-Use
1/31/2022

Dear

Thank you for the submission of HDIUT data files
This is an automated E-mail message from CARB's HDIUT System. Please **DO NOT** Reply To This E-Mail.
Please review the results for files and contact CARB staff at hd-inuse@arb.ca.gov if you have any questions about the results.

Files Status: **accepted**

Submitted files to the HDIUT System:

- HDIUTXYZ.xml
- HDIUTXYZ.csv
- HDIUTXYZmap.csv
- HDIUTXYZmaint.pdf

Number of errors is found in the submitted files:

- Total error in XML file: 0
- Total error in Hz file: 0
- Total error in MAP file: 0
- Other error: 0

Thank you.

Regards,
CARB HDIUT System

- Unsuccessful notification example (with errors shown)

Summary results of files from CARB system-- Status: **rejected** - XML File...

hdiut-automatic-system@arb.ca.gov
To: CARB Heavy Duty In-Use
9/19/2023

If there are problems with how this message is displayed, click here to view it in a web browser.

HDIUTABCD.txt
2 KB

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Dear

Thank you for the submission of HDIUT data files
...

Files Status: **rejected**

Submitted files to the HDIUT System:

- ...
- ...

Number of errors is found in the submitted files:

- Total error in XML file: 6
- Total error in Hz file: 0
- Total error in MAP file: 0
- Other error: 0

-----Error in the XML File (HDIUTABCD.xml)-----

1. Error message 1 ...
2. Error message 2 ...

...

All errors can be found in the attached file.

Please check and fix the errors and resubmit all of the files again using CARB's HDIUT System.

If you have any question regarding errors, please contact to the HDIUT staff at hd-inuse@arb.ca.gov.

Thank you.

A text file describing errors

Number of errors

Error description part

Error fix & re-submittal request message

Validation of the Submitted HDIUT Data - Examples of Error Messages

- In XML files,
 - "Parsing error in the XML file and a problem is found in: The 'XYZZ' start tag on line LLL position PP does not match the end tag of 'XYZ'. Line LLLL, position P."
 - "First character of ...TestEngineFamilyName does not follow the ...ModelYear"
 - "...CodeHistoryIndicator is set as 'Y', therefore, ...DeviceCodeIdentifier is required."
- In 1hz files, ...
 - "THC_Dry_To_Wet_Correction is required in 1-Hz file and cannot be empty"
 - "EMD_Code_Set should be 'Y' or 'N'. --In row number (X to XXXXX)"
 - "Regen_Signal should be (-1 to 2) --In row number (YYY to YYYYYY)"
- In all or part of three files,
 - "TestSelectionDate in 1-Hz file does not match with the XML file (in 1-Hz File value is 2019MMDD, but in XML file, it is 2018MMDD)"

New Methodology for HDIUT Data (File) Submission & Validation - Summary

- Starting from July 1, 2024, OEMs submit their HDIUT Data (files) directly through HMS: <https://ssl.arb.ca.gov/hms>
 - For 2023 and later TO HDIUT data (files)
 - ❑ Both original (first) or revised submission
 - Or, indirectly with assistance from CARB staff (until December 31, 2024)
 - ❑ OEMs to CARB staff; through HMS by CARB staff; any messages back to OEMs
 - For 2022 and earlier TO HDIUT data, use the current/old methodology
 - ❑ Electronic media or email attachments
- Upon successful submission and data validation, OEMs receive two sets of notification (at HMS and/or via e-mail)
 - Upon unsuccessful submission: Error and re-submission messages at HMS
 - Upon validation failure: E-mail notification with error descriptions
 - ❑ For either case, OEMs need to correct errors and re-submit HDIUT data (files).

Contact Information

- For any questions regarding the new HDIUT data (file) submittal and HDIUT data validation, contact
 - CARB Heavy Duty In-Use Compliance (HDIUC) section: hd-inuse@arb.ca.gov
- These presentation slides are available at [How to Use HMS](#).
- For any questions regarding HDIUT program, contact
 - CARB HDIUC section: hd-inuse@arb.ca.gov
 - Thomas Montes, In-Use Program (IUP) Branch Chief: thomas.montes@arb.ca.gov
 - Abraham Lee, Air Resources Engineer: abraham.lee@arb.ca.gov

Q & A