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**Data Exchange Platform**

**API Setup Reference Guide**

**Faults**

**Version 1.3**

**Released on Aug’2022**

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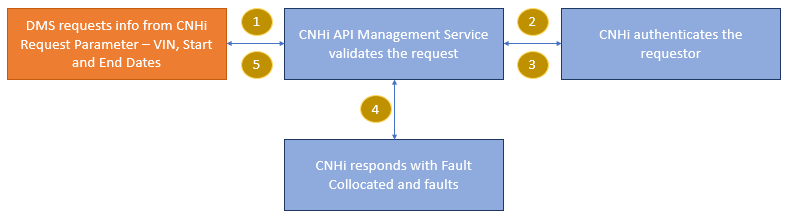
# **Document Control**

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Revision Date | Revision History | Author |
| 1.0 | August 2022 | New Release | TCS |
| 1.1 | October 2022 | Included the CERT instance URL and revised the Request and Response Parameters | TCS |
| 1.2 | November 2022 | Updated URLs for Dev and UAT | TCS |
| 1.3 | 28 November 2022 | Update APIM URL to given domain URL | TCS |

# **Overview**

Faults API exposes faults data to the DMS providers, which enables them to have all the information about the equipment required while creating the work order in DMS. A DMS provider can query the active fault and/or the historical (30 days) fault data on a real time basis by providing the Vehicle Identification Number (VIN) and/or start and end dates in the API request parameter. The API provides information about geographical information of the equipment and the various faults occurred between the requested dates as a response. If the request does not contain the date range, by default the faults of last 24 hours will be shared. All the faults and its relevant data are extracted from the Geo Spatial System (GSS) of CNHi.

Pictorial representation of the data flows below.



# **Pre-requisites to access the API**

* To request for the fault details, the dealer should be registered and possess a user ID from CNHi dealer portal.
* No Additional configuration or access required for the GSS system of CNHi.
* All the API setups require a basic http authorization header, which will require an API Subscription key

# **API setup**

CNHi’ s has built a data exchange platform, which provides the flexibility to the end users to request information from CNHi system in the following format.

1. REST API

CNHi’ s data exchange platform will take care of the format transformations (as needed) to process the request and provide a response to the DMS system.

DMS providers who already have the connection established to the CNHi’ s GSS system can continue to use their REST API format. All such DMS providers are required to change the request end point URL alone in their systems (details in connection details section). The response format from the CNHi system will remain unchanged.

# **Connection Details**

While developing this interface, we want to avoid changes and perform testing in a live environment to that end, CNHi provides three environment contexts for its APIs:

* Staging/QA/UAT
* Production

The environments are identical, requiring only that you change out your connection string and authorization endpoint to connect to any of the environments.

Rest

|  |  |
| --- | --- |
| Environment | REST |
| DMS UAT - Staging/QA/UAT | [https://apim-uat.dep.cnhind.com/external/services/v1/assets/{assetid}/faults/{startdate}/{enddate}](https://EUDEXPLAPIMGMCOYEACC01-apim.dep.cnhind.com/services/v1/assets/%7bassetid%7d/faults/%7bstartdate%7d/%7benddate%7d) |
| Production | Being constructed |

*queryparams – please refer to the API Request Parameters section for the details*

# **6. Request and Response Structure**

# **6.1 Request Description**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | In | Type | Is Required | Default Value | Comments |
| assetid | query | Char | True | false | Serial/Vehicle Identification number of the equipment |
| startDate | query | string (date- time) | false | endDate - 1 day | The date- time notation as defined by RFC 3339, section 5.6 , for example, 2017-07- 21T17:32:28Z |
| endDate | query | string (date- time) | false | now() | The date- time notation as defined by RFC 3339, section 5.6 , for example, 2017-07- 21T17:32:28Z |

# **6.2 Response Description**

The API response is structured at a high level as detailed in the table below.

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| time | string (date- time) | The date-time notation as defined by RFC 3339, section 5.6, for example, 2017-07-21T17:32:28Z. |
| pos.time | date-time | Datetime from GPS. The date-time notation as defined by RFC 3339, section 5.6, for example, 2017-07- 21T17:32:28Z. |
| pos.lat | double | Latitude, GPS data. From pos\_point Point object. |
| pos.lon | double | Longitude, GPS data. From pos\_point Point object. |
| country.code | string |  |
| country.name | string | Decoded value of country.code |
| country.timeZone | string |  |
| records | array[[fault](https://dev.azure.com.mcas.ms/Data-Exchange-Platform/DEP/_wiki/wikis/DEP.wiki?wikiVersion=GBwikiMaster&_a=edit&pagePath=/DEP%20Wiki/Scope%20and%20Design/Service%20Data%20Exchange/Flow%202%3A%20DMS%252DCentric%20Approach/Work%20Order%20Creation%20Process/Telematics%20Interface%20%5BFault%20Codes%5D/DMS%20Specification%20%22Get%20Faults%20Data%22&pageId=148&anchor=fault&McasTsid=26110)] |  |

The details of the various variables under each category of the response structure are detailed in the following tables.

**Fault**

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| eventType | string | MEDIUM\_TRACTOR\_FAULT\_TELEMATIC\_DIAG, HARVESTER\_FAULT. |
| Dtc | integer | Diagnostic Trouble Code. |
| Spn | integer | Suspect Parameter Number. |
| Fmi | integer | Failure Mode Identifier. |
| Source | string | Fault source, either Vehicle bus or ISO bus (only Vehicle bus for now). |
| sourceAddress | integer | Source address or electronic control unit. |
| Description | string | Enriched DTC description. |
| applicationDescription | string | DTC application specific description. |
| Application | string | Application name (platform) |
| Standard | string | Automotive engineer’s standard. |
| System | string | System |
| systemDescription | string | System Description |
| cnhEcu | string | CNH ECU |
| originEcu | string | Originating ECU |
| originEcuDescription | string | Originating ECU Description |
| yellowWarnLamp | boolean |  |
| redStopLamp | boolean |  |
| specLampIcon | boolean |  |
| priorityOnBoard | integer |  |
| priorityOffBoard | integer |  |
| visibleCustomerOffBoardDealer | Boolean |  |
| visibleCustomerOffBoardGrower | Boolean |  |
| visibleCustomerOnBoard | Boolean |  |
| Occurrences | integer | A counter that counts the occurrence of the error condition for each SPN/FMI or DTC. |
| Active | boolean | faults.faultStatus != 0 |
| Enriched | Boolean |  |
| engHours | double | The last known value of ENG\_HOURS metric within configured metricLateness duration from the fault time. For example, the most recent value of ENG\_HOURS metric that has event\_timestamp between (not included) and (included). Right now, = 15.minutes. |
| rawDescription | string | Description field from a raw message. |
| errorTags | array[string] | The list of processing warnings separated by a comma. |

The API responses are accompanied with a response code that describes the status (Successful, Unsuccessful) of the request. The below are the possible scenarios and their response codes.

**Response Codes**

|  |  |  |
| --- | --- | --- |
| Title | Reason | Code |
| REST faults success response | Success | 200 |
| REST faults failure response | Bad Request: Request query params are invalid | 400 |
| REST faults failure response | Vehicle with provided VIN doesn't exist | 404 |

# **6.3 Examples**

##### **REST Response**



##### **Sample Postman Collection**

