THE AUTOMOTIVE RESEARCH ASSOCIATION OF INDIA

GUIDELINE REQUIREMENTS DOCUMENT FOR DATA FORMAT AND API FOR ELECTRONICALY UPLOADING OF EMISSION TEST DATA FROM PUC EQUIPMENT / PUC CENTER TO VAHAN THROUGH AN ONLINE PROCESS

R 4.0 DT. 26 SEP 2018

ARAI®
Progress through Research

Contents

DATA FORMAT REQUIREMENTS

4 GAS ANALYSER

Measurement Test Data Acquisition and Electronic Upload

The instrument shall be equipped with suitable means to acquire in use vehicle emission test data of each measurement test performed in the field.

The instrument shall be equipped with a facility to electronically upload measured field test data to NIC web application through an API.

The data parameters to be electronically uploaded to the NIC web application shall include the following in the prescribed sequence:

Sr. No.	Parameter	Field Type	Field Size	Example
1	CO	Numeric	5	1.23
1	HC	Numeric	5	6666
2	CO2	Numeric	5	12.12
3	O2	Numeric	5	12.12
4	Engine speed	Numeric	5	6666
5	Lambda CO	Numeric	5	1.23
6	Lambda	Numeric	5	0.987
7	Date of test	Text	12	DD-MM-YYYY
8	Time of test	Text	8	HH:MM

API FOR 4 GAS ANALYSER

Manufacturer / supplier of type approved PUC test equipment shall develop an “Application Program Interface” (API) for its type approved PUC test equipment model. The API shall communicate with the PUC test equipment on one end and with NIC web application on the other end. The API shall follow the following guidelines / meet the following requirements:

1. The API shall be web enabled / web compatible

2. Preferred web browser for the API shall be either Mozilla Firefox or Google Chrome

3. It shall be possible to call the API through an URL. Typical URL may be as below. However, the PUC test equipment manufacturer / supplier shall finalise URL.

    3.1 http://localhost:xxxxx/api/PUC_Test_Equipment_Manufacturer/Model_t (For default value return)

3.2 http://localhost:xxxxx/api/PUC_Test_Equipment_Manufacturer/Model (For actual test)

4. The output of the API shall be in “JSON” format

5. Return parameter shall be as below:

<PUC Test Equipment Manufacturer / Model_tController.puc_data>
<CO>1</CO>
<HC>2</HC>
<CO2>3</CO2>
<O2>4</O2>
<RPM>5</RPM>
<Lambda_CO>6</Lambda_CO>
<Lambda>7</Lambda>
<Date>01-01-2018</Date>
<Time>12:12</Time>
<Reserve>8</Reserve>
<Status>OK</Status>
</PUC Test Equipment Manufacturer / Model_tController.puc_data>

SMOKE METER

Measurement Test Data Acquisition and Electronic Upload

The instrument shall be equipped with suitable means to acquire in use vehicle emission test data of each measurement test performed in the field.

The instrument shall be equipped with a facility to electronically upload measured field test data to NIC web application through an API.

The data parameters to be electronically uploaded to the NIC web application shall include the following in the prescribed sequence:

Sr. No.	Parameter	Field Type	Field Size	Example
1	Average engine speed in flushing cycle	Numeric	5	6666
2	Measurement cycle 1, opacity (K value)	Numeric	4	1.23
3	Measurement cycle 1, max engine speed	Numeric	5	6666
4	Measurement cycle 1, oil temperature	Numeric	3	60
5	Measurement cycle 2, opacity (K value)	Numeric	4	1.23
6	Measurement cycle 2, max engine speed	Numeric	5	6666
7	Measurement cycle 2, oil temperature	Numeric	3	60
8	Measurement cycle 3, opacity (K value)	Numeric	4	1.23
9	Measurement cycle 3, max engine speed	Numeric	5	6666
10	Measurement cycle 3, oil temperature	Numeric	3	60
11	Average opacity of three measurement cycle readings	Numeric	4	1.23
12	Date of test	Text	12	DD-MM-YYYY
13	Time of test	Text	8	HH:MM

API FOR SMOKE METER

Manufacturer / supplier of type approved PUC test equipment shall develop an "Application Program Interface" (API) for its type approved PUC test equipment model. The API shall communicate with the PUC test equipment on one end and with NIC web application on the other end. The API shall follow the following guidelines / meet the following requirements:

1. The API shall be web enabled / web compatible

2. Preferred web browser for the API shall be either Mozilla Firefox or Google Chrome

3. It shall be possible to call the API through an URL. Typical URL may be as below. However, the PUC test equipment manufacturer / supplier shall finalise URL.

    3.3 http://localhost:xxxxx/api/PUC_Test_Equipment_Manufacturer/Model_t (For default value return)
    3.4 http://localhost:xxxxx/api/PUC_Test_Equipment_Manufacturer/Model (For actual test)

4. The output of the API shall be in "JSON" format

5. Return parameter shall be as below:

    <PUC Test Equipment Manufacturer / Model_tController.puc_data>
    <Flush_Cyl>#PT;100;5000;60</Flush_Cyl>
    <Status>OK</Status>
    <Test1>TR01; 0.63;800;5000;60</Test1>
    <Test2>TR02; 0.63;800;5000;60</Test2>
    <Test3>TR03; 0.63;800;5000;60</Test3>
    <Test_AVG>#TA;0.63</Test_AVG>
    <Date>01-01-2018</Date>
    <Time>12:12</Time>
    <Test_Status>#TS0</Test_Status>
    </PUC Test Equipment Manufacturer / Model_tController.puc_data>

String	Description
<Flush_Cyl>#PT;100;5000;60</Flush_Cyl>	Flush cycle, Idle RPM, Max RPM, Oil Temp
<Test1>TR01;0.63;800;5000;60</Test1>	Free acceleration test 1, K Value, Idle RPM, Max RPM, Oil Temp
<Test2>TR02;0.63;800;5000;60</Test2>	Free acceleration test 2, K Value, Idle RPM, Max RPM, Oil Temp
<Test3>TR03;0.63;800;5000;60</Test3>	Free acceleration test 3, K Value, Idle RPM, Max RPM, Oil Temp
<Test_AVG>#TA; 0.63</Test_AVG>	Test Average K Value
<Test_Status>#TS0</Test_Status>	#TS0 – Test successful by instrument #TS1 – Test fail by instrument #TS2 – Test abort by instrument

xxxxx