

## **Engines and Vehicles Compliance Information System (EV-CIS)**

### **Log of XML Schema Changes Made for**

### **Non-Road Compression Ignition Release Helium 21.0 – 08/05/2016**

#### **Purpose**

This document identifies XML schema modifications to the Engines and Vehicles Compliance Information System (EV-CIS) Non-Road Compression Ignition family of schemas. Modifications that involve the addition of new schema components were also made according to the current schema development paradigm per EPA XML data standard [GD2-E]. For new and modified data elements, the annotation following the data element name references the corresponding data element type description. Note that individual data elements may be used in more locations in the schemas than defined in the shared data element file.

#### **NR Modified XML Files**

EN\_VER\_HDNRCI\_CompressionIgnitionDataElements\_v0.95.xsd  
EN\_VER\_NR\_SharedDataElements\_v0.95.xsd

#### ***EN\_VER\_HDNRCI\_CompressionIgnitionDataElements\_v0.95.xsd***

- The complex data type EngineFamilyDetailsType was changed as follows:
  - Data element CARBExecutiveOrderBasedCertificationIndicator [Y/N (NRCI-EF251)] was added with cardinality (1,1).
- The complex data type TestInformationDetailsType was changed as follows:
  - Data element SteadyStateCycleWorkMeasure [0.000001 to 9,999.999999 (NRCI-TI248)] was added with cardinality (0,1).
  - Data element TransientHotStartCycleWorkMeasure [0.000001 to 9,999.999999 (NRCI-TI249)] was added with cardinality (0,1).
  - Data element TransientColdStartCycleWorkMeasure [0.000001 to 9,999.999999 (NRCI-TI250)] was added with cardinality (0,1).

#### **XML Shared Data Element and Data Type File Modifications**

The annotation following the data element name references the corresponding data element identifiers in the data requirements (DR) spreadsheet. Note that some data elements may be used in more locations in the schemas than defined in the DR spreadsheet.

#### ***EN\_VER\_NR\_SharedDataElements\_v0.95.xsd***

The following data element updates were implemented:

- The data type for data element DownwardAdjustmentFactorValue [g/kW-hr, 0.000000 to 99,999.999999 (NRCI-195)] was changed to Decimal11Point6NonNegativeType.
- The data type for data element EmissionTestWithoutRegenerationEFLMeasure [0.000000 to 99,999.999999 (NRCI-AF192)] was changed to Decimal11Point6NonNegativeType.
- The data type for data element EmissionTestWithRegenerationEFHMeasure [0.000000 to 99,999.999999 (NRCI-AF193)] was changed to Decimal11Point6NonNegativeType.

- The data type for data element PollutantModeTestResultValue [0.000000 to 999,999,999.999999 (NRCI-TI181)] was changed to Decimal15Point6NonNegativeType.
- The data type for data element SteadyStatePollutantTestResultValue [0.000000 to 9,999.999999 (NRCI-TI166)] was changed to Decimal10Point6NonNegativeType.
- The data type for data element TransientColdStartPollutantTestResultValue [0.000000 to 9,999.999999 (NRCI-TI172)] was changed to Decimal11Point6NonNegativeType.
- The data type for data element TransientHotStartPollutantTestResultValue [0.000 to 9,999.999999 (NRCI-TI171)] was changed to Decimal11Point6NonNegativeType.
- The data type for data element UpwardAdjustmentFactorValue [g/kW-hr, 0.000 to 99999.999999 (NRCI-194)] was changed to Decimal11Point6NonNegativeType.
- Data element SteadyStateCycleWorkMeasure [0.000001 to 9,999.999999 (NRCI-TI248)] was added with data type Decimal10Point6PositiveType.
- Data element TransientColdStartAdjustedPollutantTestResultValue [0.000 to 9,999,999,999.999 (NRCI-TI230)] was added with data type Decimal13Point3NonNegativeType.
- Data element TransientColdStartCycleWorkMeasure [0.000001 to 9,999.999999 (NRCI-TI250)] was added with data type Decimal10Point6PositiveType.
- Data element TransientHotStartAdjustedPollutantTestResultValue [0.000 to 9,999,999,999.999 (NRCI-TI229)] was added with data type Decimal13Point3NonNegativeType.
- Data element TransientHotStartCycleWorkMeasure [0.000001 to 9,999.999999 (NRCI-TI249)] was added with data type Decimal10Point6PositiveType.

The following data type updates were implemented:

- Data type Decimal10Point6NonNegativeType was added.
- Data type Decimal10Point6PositiveType was added.
- Data type Decimal11Point6NonNegativeType was added.
- Data type Decimal13Point3NonNegativeType was added.
- Data type Decimal15Point6NonNegativeType was added.