

# **VERIFY**

## **Schema Change Log of changes made to Heavy Duty In Use**

This document identifies XML schema modifications made to the VERIFY Heavy Duty In Use (HDIU) schema. There are two basic types of modifications. Modifications that involve internal file structure, having no impact on the logical data model, were made to bring the new schema in sync with the current schema development paradigm per EPA XML data standard [GD2-E]. These changes involve only the location and organization of the schema components that comprise the logical data model and some changes to data type names. No data element names were changed in this process. Modifications that involve the requested changes were also made.

### **HDIU Modified/New XML Files**

#### **EN\_VER\_HDIU\_HeavyDutyInUseSubmissionRootElement\_v0.9.xsd**

(Replaces EN\_VER\_HDIU\_HeavyDutyInUseSubmissionInformationRootElement\_v0.85.xsd.)

#### **EN\_VER\_HDIU\_SharedDataElements\_v0.9.xsd**

(Replaces numerous schema component files and contains all new data element definitions. All HDIU schema component files were merged into this single shared component file.)

### **HDIU XML Schema Modifications**

For all data elements, the annotation following the data element name references the corresponding data element identifier in the Data Requirements spreadsheet.

#### **EN\_VER\_HDIU\_HeavyDutyInUseSubmissionRootElement\_v0.9.xsd**

The following data element changes were made to EngineIdentificationDetails[Type]:

- Data element EngineModelDesignator [1 to 20 characters allowing blank, / and - (HDIU32)] was modified to allow up to 20 characters.
- Data element EngineCodeDesignator [1 to 20 characters allowing blank, / and - (HDIU33)] was modified to allow up to 20 characters.
- Data element EngineSerialNumberText [1 to 20 characters, optional - (HDIU34)] was modified to allow up to 20 characters.

The following data element changes were made to VehicleRecordDetails[Type]:

- Data element DriveWheelCount [1 to 9 (HDIU89)] was deleted.
- Data element DriveAxleCount [1 to 9 (HDIU89)] was added with cardinality (0,1).

The following data element changes were made to EngineComponentManufacturerDetails[Type]:

- Data element HardwareNumberIdentifier [1 to 20 characters (HDIU97)] was modified to allow up to 20 characters.

The following data element changes were made to VehicleTrailerDetails[Type]:

- Data element TrailerIdentificationNumber [1 to 17 alphanumeric characters (HDIU96)] was modified to allow only alphanumeric characters.

The following data element changes were made to VehicleTestDetails[Type]:

- Complex data element PMPortableDeviceDetails was added with cardinality (0,1).

The complex data element PMPortableDeviceDetails[Type] was added as follows:

- Data element DeviceManufacturerName [1 to 25 characters (HDIU296,399)] was added with cardinality (1,1).
- Data element DeviceModelName [1 to 25 characters (HDIU297,400)] was added with cardinality (1,1).
- Data element DeviceSerialNumberText [1 to 20 characters (HDIU298,401)] was added with cardinality (1,1).
- Data element DeviceChangeDescriptionText [1 to 1000 characters (HDIU327,402)] was added with cardinality (1,1).

The following data element changes were made to ZeroTestDetailsType which is assigned to ZeroCheckAfterDetails, ZeroCheckBeforeDetails and ZeroCheckDuringDetails:

- Data element ZeroResponsePMMeasure [-9,999.9 to 9,999.9 ng (HDIU347,365,374)] was deleted.

The following data element changes were made to SpanTestDetailsType which is assigned to SpanCheckAfterDetails and SpanCheckBeforeDetails:

- Data element SpanResponsePMMeasure [0.0 to 99,999.9 ng (HDIU356,383)] was deleted.

The following data element changes were made to NotToExceedEventDetails[Type]:

- Data element EventAverageCOValue [-1.0 to 999.9 (HDIU248)] was modified to match the decimal(4.1) standard data type.
- Data element EventAverageNOXAndNMHCValue [-1.00 to 999.99 (HDIU394)] was modified to match the decimal(5.2) standard data type.

The following data element changes were made to EngineFamilyDetails[Type]:

- Data element LimitedTestRegionCertificationIndicator [Y/N (HDIU45)] was deleted.
- Data element TimeWeightedLimitedTestRegionCertificationIndicator [Y/N (HDIU45)] was added with cardinality (1,1).
- Complex data element LimitedTestRegionCoordinates was deleted.
- Complex data element TimeWeightedLimitedTestRegionCoordinates was added with cardinality (0,unbounded).

The complex data element LimitedTestRegionCoordinates[Type] was deleted.

The complex data element TimeWeightedLimitedTestRegionCoordinates[Type] was added as follows:

- Data element TimeWeightedXCoordinateValue [0.00 to 9,999.99 (HDIU47)] was added with cardinality (1,1).
- Data element TimeWeightedYCoordinateValue [0.00 to 9,999.99 (HDIU48)] was added with cardinality (1,1).