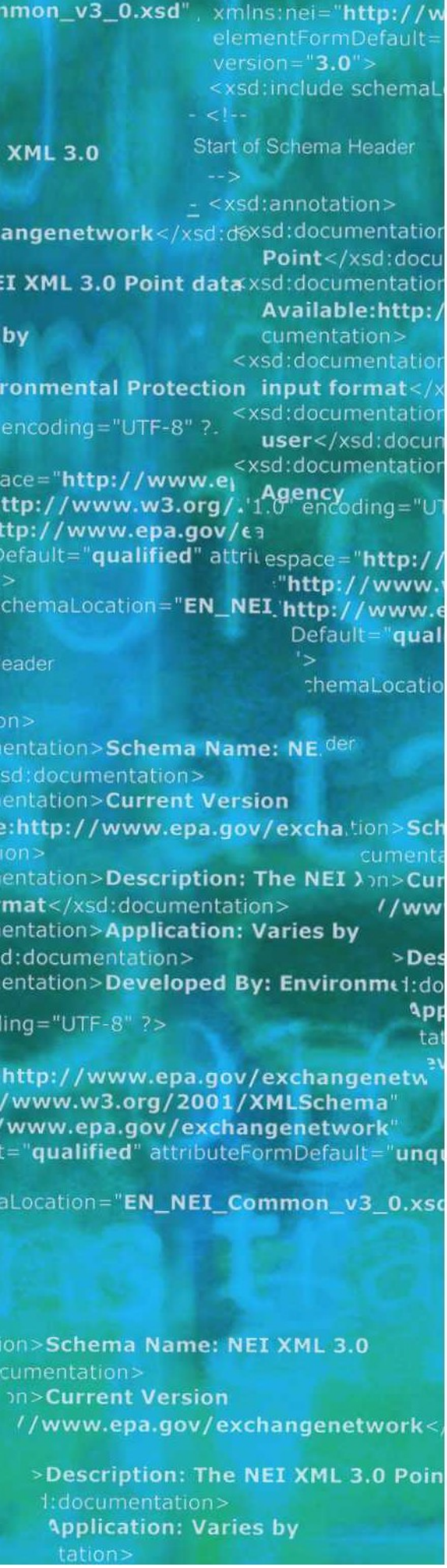

OpenNode2

RCRAInfo Outbound 5.6 Data Exchange Implementation Guide (.NET)

Date: 5/13/2019

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Environmental Information exchange Network

Revision History

Date	Author	Changes	Version
2/16/2015	Windsor	Initial version	1.0
4/13/2018	Windsor	Updated for version 5.6 schema. Includes new GetCurrentHandler solicit (REPORT_UNIVERSE)	1.1
5/13/2019	Windsor	Clarified Delete before Insert behavior	1.2

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Data Exchange Overview

The purpose of this document is to provide detailed instructions for the installation and configuration of the Exchange Network Resource Conservation and Recovery Act information system (RCRAInfo) Outbound data exchange on the .Net implementations of the Exchange Network OpenNode2 (OpenNode2).

The RCRAInfo Outbound data exchange offers a data service that is used to **solicit and retrieve** data from the EPA RCRAInfo system and load the data into the RCRA Outbound staging tables.

Further detail about the RCRAInfo Outbound data exchange is available in the Flow Configuration Document (FCD) published at exchangenetwork.net.

The RCRAInfo Outbound data exchange configuration process involves two main steps: 1) install and configure the RCRAInfo data flow 2) configure exchange services and node job schedules. The rest of this document will describe these two processes in detail.

Terminology

Outbound data flow refers to the ability to obtain (solicit, query) data from the EPA. In other words, it is data outbound from the EPA.

Inbound data flow refers to the ability for a partner to push data to another partner. In the case of EPA, the data is going from the State, and data is coming Inbound into the EPA.

This document describes the RCRA Outbound data flow. Separate documentation can be found on GitHub that describes the RCRA Inbound data flow.

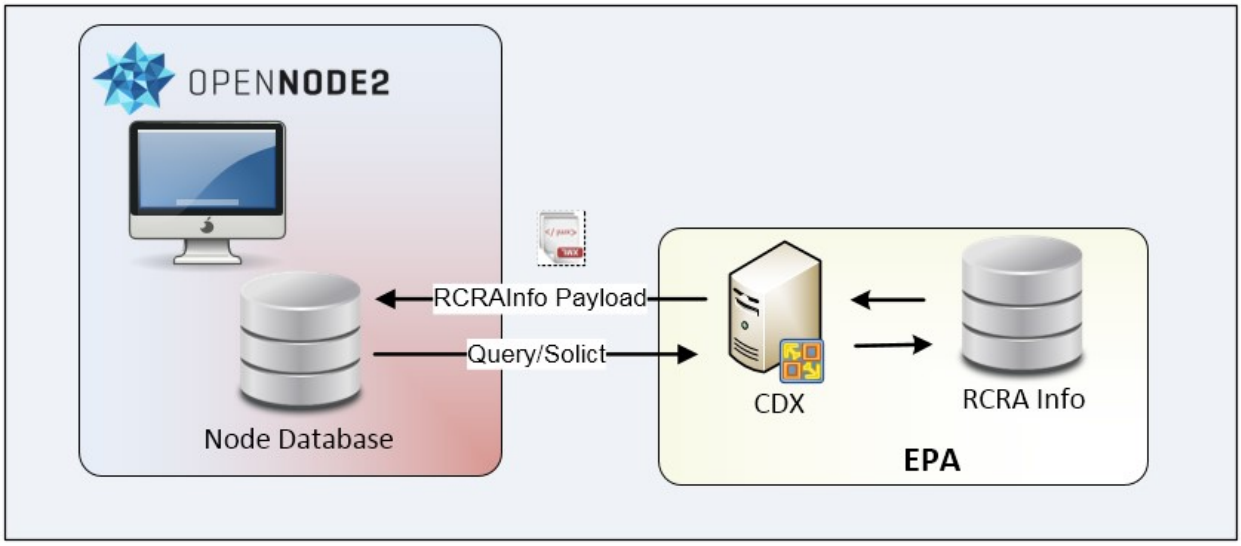
Important 5.6 Updates

The newest schema version, 5.6, introduced several important changes. The new GetCurrentHandlerByState and GetCurrentHandlerByID allows users to download the most current handler record, which is populated from the HREPORT_UNIV RCRA Info table. Additionally, new attributes have been added to the Handler payload (GetHDDataByState) including Trader Import and Export indicators, Slab Import and Export Indicators, Recycler Activity and Manifest Broker.

Note, there is no 5.5 plugin for this dataflow. The plugin version went from 5.4 to 5.6.

Plugin Architecture

The diagram below shows the architecture of a typical OpenNode2 Outbound plugin and how services that access the plugin's functionality are configured by a node administrator.



A plugin contains one or more **implementers**. Implementers are canned functionality that are specific to the data exchange. An implementer performs some task, such as composing XML from a series of staging tables.

A node administrator exposes the functionality in an implementer by creating **services**. When a service is created, an implementer must be chosen. Each service may have one or more configuration arguments, defined by the implementer. For example, the service may require that a database connection or node partner URL be provided. Services can be made available to external partners in the form of a query or solicit or as an inbound submission processor. "Task" services are internal only and are accessed via a **schedule**. Schedules also can have configuration arguments which are used by the plugin implementer assigned to the schedule.

RCRAInfo Data Flow Deployment

NOTE: This deployment and configuration guide is for the **Java version** of OpenNode2 with an **Oracle** database platform.

Install Data Objects for RCRAInfo Data Flow

Install RCRAInfo Data Objects for Node Flow Database

1. Open **MS SQL Server Management Studio**
2. Create a new database called NODE_FLOW_OUTBOUND (or something similar)
3. Open and execute "RCRA_5.6-SQL-DDL.sql. For the outbound staging tables, if you already have existing version, you can run the upgrade script instead, called: RCRA_5.4_to_5.6-

upgrade_SQL-DDL.sql. There are corresponding scripts available for the Oracle platform if required.

Configure Partner and Data Sources

For the following steps, use the appropriate OpenNode2 Administration Utility.

Configure Network Partner

1. Click the **Configuration** button
2. Click the **Network Partners** button
3. Click **Add Partner**, and enter the following values for the new Network Partner:
    - **Name**: CDX RCRA Production *["Test" or "Production"]*
    - **Endpoint URL** (test): *https://testngn.epacdxnode.net/ngn-enws20/services/NetworkNode2Service*
    - **EndPoint URL** (production): *https://cdxnodengn.epa.gov/ngn-enws20/services/NetworkNode2Service*
4. **Version**: Select *Node v2.0* from the drop-down list

Configure Node Data Sources

1. Click the **Configuration** button
2. Click the **Data Sources** button
3. Click **Add Data Source**, and enter the following values for the Node Flow staging tables where the RCRA outbound tables are located:
    - **Name**: *RCRA-OUTBOUND*
    - **Provider:** *System.Data.SqlClient*
    - **Connection**: Server=[IP address of test or production server];Database= NODE_FLOW_INBOUND;User Id=[MyUser;Password];Password=[MyPassword]

Configure Node Exchange and Services

For the following steps, use the appropriate OpenNode2 Administration Utility.

Configure Exchange

1. Click on the **Exchanges** tab
2. Click the **Add Exchange** button**,** and enter the following values for the new Exchange:
    - **Name**: *RCRA Outbound*
    - **Description**: *RCRAInfo Outbound (from EPA) Data Exchange*
    - **Contact**: Select *YourEmailHere@State.gov* from the drop-down list
    - **Web Info**: http://www.exchangenetwork.net/data-exchange/rcrainfo/

- **Protected**: Checked/True

3. Click the **Save** button
4. Click the **Uploaded Plugin** button
5. Click the **Choose File** button, then select the [PLUGIN FILENAME].zip file (found in the GetRCRAInfoData_56 folder)

   OpenNode2 and all related .Net plugins can be found at GitHub, by clicking Download .Net.
6. Select *RCRA Outbound* from the **Exchange** drop-down

Configure Exchange Services

DownloadAndImport

The DownloadAndImport looks for pending solicits and checks the status at the EPA. If the status at the EPA is "completed" then the processor will download the file and insert the data into the RCRA Outbound staging tables. Only one processor service needs to be established to accommodate all solicits.

1. Under the **RCRA Outbound (protected)** exchange, click the **Add Service** button, and enter the following values for the new Service.
   - **Name**: *DownloadAndImportRCRAInfoData*
   - **Implementer**: Select *DownloadAndImportRCRAInfoData* from the drop-down list
   - **Type**: *Task*
   - **Delete Existing Data Before Insert (True or False):** Setting to true will remove all the data from the staging database, otherwise the data will append. Note that all data is deleted, not just for solicited payloads.
   - **Max Check Status Days (default: 2 days)**: *7*
   - **Postprocessing Stored Procedure Execute Timeout (in seconds)**: <leave blank>
   - **Postprocessing Stored Procedure Name**: <leave blank or enter Stored procedure name that will run after the download occurs. This typically will move data from your staging tables to a reporting or program database.>
   - **Data Destination**: Select *NODE_FLOW_OUTBOUND* from the drop-down list

Solicit (Get Data)

Solicit services will provide the ability to obtain data from the EPA. Only one is required to be established for all payloads (HD, PM, CE, etc).

2. Under the **GetRCRAInfoData (protected)** exchange, click the **Add Service** button, and enter the following values for the new Service.
   - **Name**: *SolicitRCRAInfoData*
   - **Implementer**: Select *SolicitRCRAInfoData* from the drop-down list
   - **Type**: *Task*
   - **Solicit Endpoint Username**: *<leave blank>*
   - **Solicit Partner Name**: *RCRA v2 ["Test" or "Production"]* (same value that was entered for Network Partner Name)

Configure Node Job Schedules

Scheduled Node jobs will be required for the RCRAInfo Outbound Data Flow implementation.

Note, ByState is most common. There is no need to establish ByHandler if you are looking for all data for a given state.

Configure GetRCRAHDDataByState Schedule (Handler)

1. Click the **Schedules** tab
2. Click the **Add Schedule** button, and enter the following values for the new Schedule
    - **Name**: *GetRCRAHDDataByState*
    - **Exchange**: Select *RCRA Outbound* from the drop-down list
    - **Availability**
        i. **Starts On**: <Sunday's date>
        ii. **Ends On**: <Sunday's date + 10 years)
        iii. **Run Time**: *02:00 AM*
    - **Frequency**: *1* times per *Week*
    - **Data Source**
        i. Select the **Results of local service execution** option
        ii. **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list
        iii. **Additional Parameters**

        Select the **By Name** option, and add three parameters in the following order:

        1. **serviceName** = *GetHDDataByState*
        2. **state** = *Two Letter State Code (e.g. 'HI')*
        3. **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*
    - **Result Process**
        i. Select the **None** option
3. Click the **Save** button

Configure GetRCRACEDataByState Schedule (Compliance)

1. Click the **Schedules** tab
2. Click the **Add Schedule** button, and enter the following values for the new Schedule
    - **Name**: *GetRCRACEDataByState*
    - **Exchange**: Select *RCRA Outbound* from the drop-down list

- **Availability**
    i. **Starts On**: <Sunday's date>
    ii. **Ends On**: <Sunday's date + 10 years)
    iii. **Run Time**: *02:00 AM*
- **Frequency**: *1* times per *Week*
- **Data Source**
    i. Select the **Results of local service execution** option
    ii. **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list
    iii. **Additional Parameters**

    Select the **By Name** option, and add three parameters in the following order:

    1. **serviceName** = *GetCEDataByState*
    2. **state** = *Two Letter State Code (e.g. 'HI')*
    3. **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*
- **Result Process**
    i. Select the **None** option

3. Click the **Save** button

Configure GetRCRAGSDataByState Schedule (GeoSpatial)

1. Click the **Schedules** tab
2. Click the **Add Schedule** button, and enter the following values for the new Schedule
    - **Name**: *GetRCRAGSDataByState*
    - **Exchange**: Select *RCRA Outbound* from the drop-down list
    - **Availability**
        i. **Starts On**: <Sunday's date>
        ii. **Ends On**: <Sunday's date + 10 years)
        iii. **Run Time**: *02:00 AM*
    - **Frequency**: *1* times per *Week*
    - **Data Source**
        i. Select the **Results of local service execution** option
        ii. **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list
        iii. **Additional Parameters**

        Select the **By Name** option, and add three parameters in the following order:

        1. **serviceName** = *GetGSDataByState*
        2. **state** = *Two Letter State Code (e.g. 'HI')*

3. **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*

- **Result Process**
  i. Select the **None** option

3. Click the **Save** button

Configure GetRCRAPMDataByState Schedule (Permitting)

1. Click the **Schedules** tab
2. Click the **Add Schedule** button, and enter the following values for the new Schedule
   - **Name**: *GetRCRAPMDataByState*
   - **Exchange**: Select *RCRA Outbound* from the drop-down list
   - **Availability**
     i. **Starts On**: <Sunday's date>
     ii. **Ends On**: <Sunday's date + 10 years)
     iii. **Run Time**: *02:00 AM*
   - **Frequency**: *1* times per *Week*
   - **Data Source**
     i. Select the **Results of local service execution** option
     ii. **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list
     iii. **Additional Parameters**

     Select the **By Name** option, and add three parameters in the following order:

     1. **serviceName** = *GetPMDataByState*
     2. **state** = *Two Letter State Code (e.g. 'HI')*
     3. **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*
   - **Result Process**
     i. Select the **None** option
3. Click the **Save** button

Configure GetRCRACADataByState Schedule (Corrective Action)

1. Click the **Schedules** tab
2. Click the **Add Schedule** button, and enter the following values for the new Schedule
   - **Name**: *GetRCRACADataByState*
   - **Exchange**: Select *RCRA Outbound* from the drop-down list
   - **Availability**

i. **Starts On**: <Sunday's date>

ii. **Ends On**: <Sunday's date + 10 years)

iii. **Run Time**: *02:00 AM*

- **Frequency**: *1* times per *Week*
- **Data Source**

i. Select the **Results of local service execution** option

ii. **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list

iii. **Additional Parameters**

Select the **By Name** option, and add three parameters in the following order:

1. **serviceName** = *GetCADataByState*
2. **state** = *HI*
3. **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*

- **Result Process**

i. Select the **None** option

3. Click the **Save** button

Configure GetCurrentHandlerByState Schedule (Current Handler – Report Universe)

1. Click the **Schedules** tab
2. Click the **Add Schedule** button, and enter the following values for the new Schedule
   - **Name**: *GetCurrentHandlerByState*
   - **Exchange**: Select *GetRCRAInfoData* from the drop-down list
   - **Availability**

i. **Starts On**: <Sunday's date>

ii. **Ends On**: <Sunday's date + 10 years)

iii. **Run Time**: *02:00 AM*

   - **Frequency**: *1* times per *Week*
   - **Data Source**

i. Select the **Results of local service execution** option

ii. **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list

iii. **Additional Parameters**

Select the **By Name** option, and add three parameters in the following order:

1. **serviceName** = *GetCurrentHandlerByState*
2. **state** = *HI*

3. **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*

- **Result Process**
    i. Select the **None** option

3. Click the **Save** button

Configure DownloadAndImportRCRAInfoData Schedule

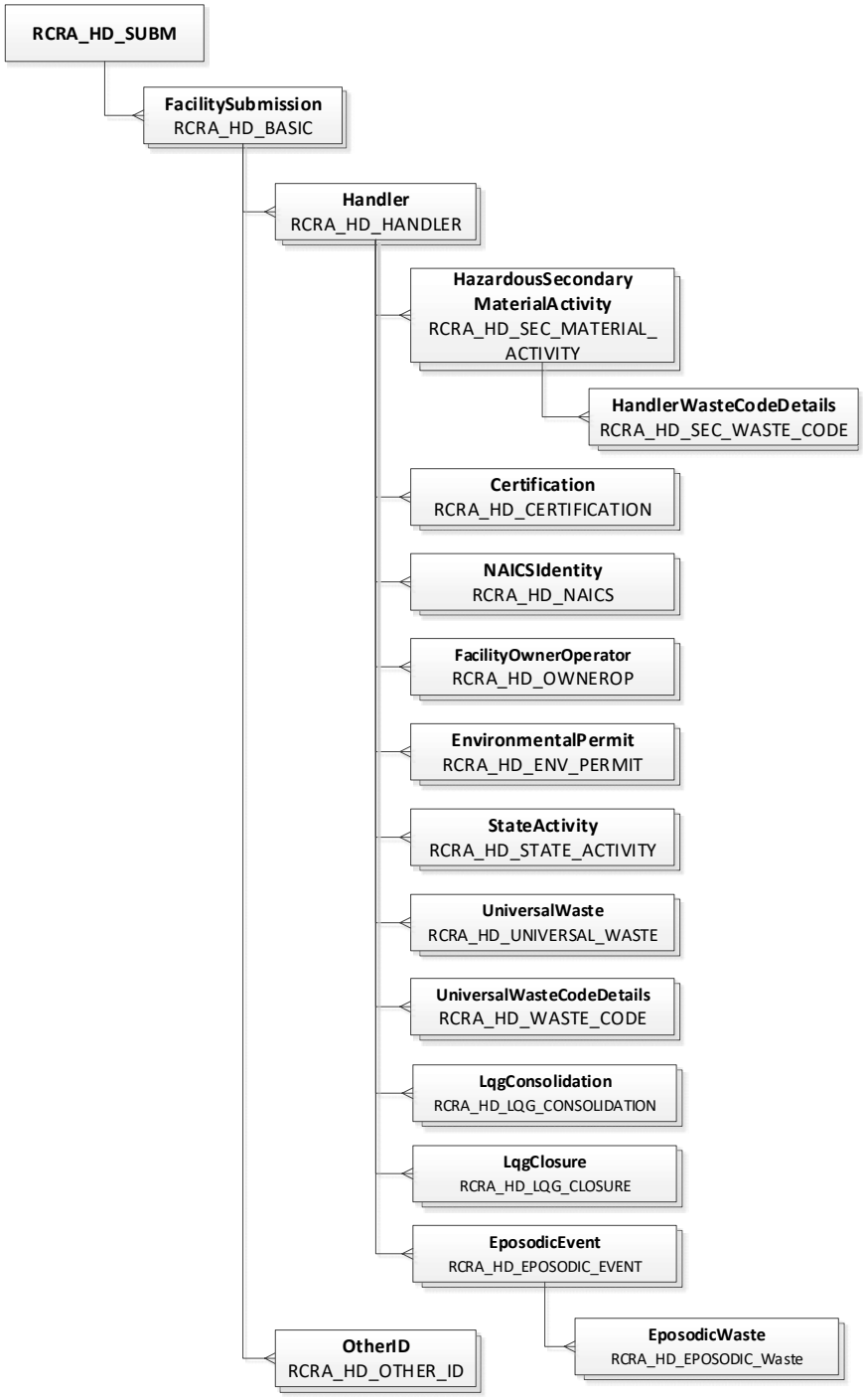
1. Click the **Schedules** tab
2. Click the **Add Schedule** button, and enter the following values for the new Schedule
    - Name: *DownloadAndImportRCRAInfoData*
    - Exchange: Select *GetRCRAInfoData* from the drop-down list
    - **Availability**
        i. **Starts On**: <Saturday's date>
        ii. **Ends On**: <Saturday's date + 10 years)
        iii. **Run Time**: *02:00 AM*
    - **Frequency**: *1* times per *Week*
    - **Data Source**
        i. Select the **Results of local service execution** option
        ii. **From**: Select *RCRA Outbound – DownloadAndImportRCRAInfoData* from the drop-down list
        iii. **Additional Parameters**

        None
    - **Result Process**
        i. Select the **None** option
3. Click the **Save** button

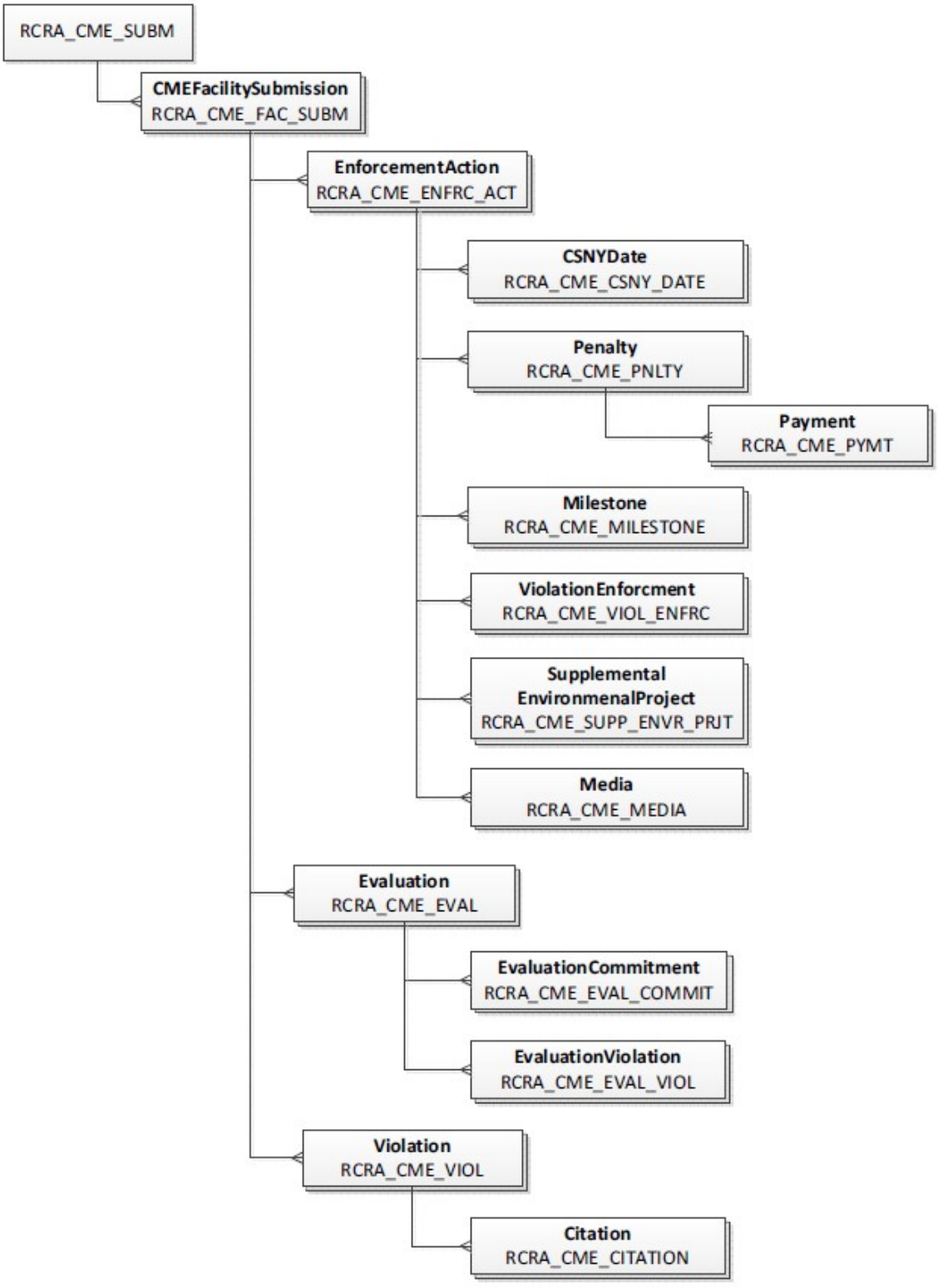
Appendix A: Staging Table Diagrams

The diagrams below show the relationship between the major RCRA schema components and their corresponding OpenNode2 staging table name.

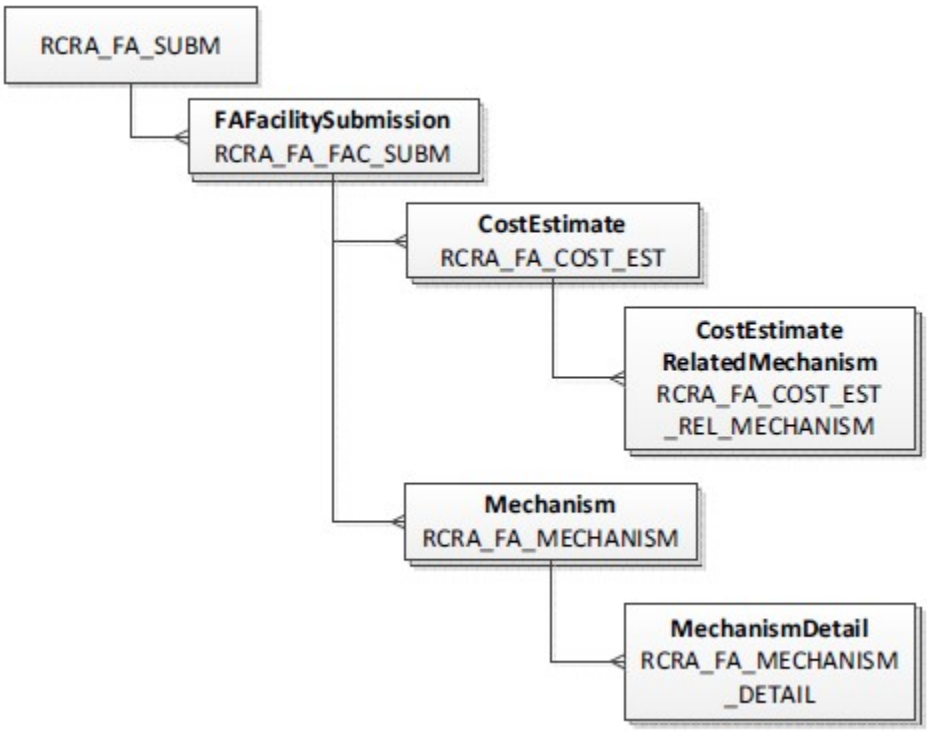
Handler (HD)



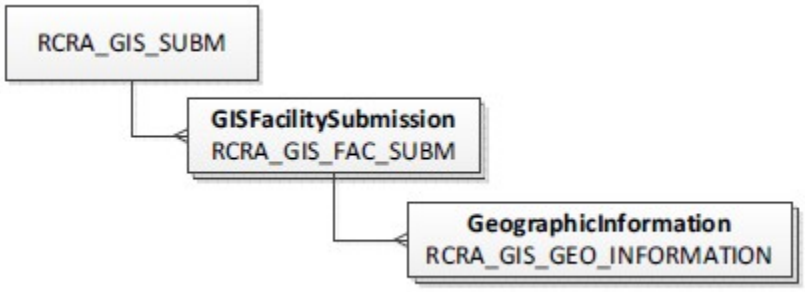
Compliance Monitoring and Enforcement (CME)



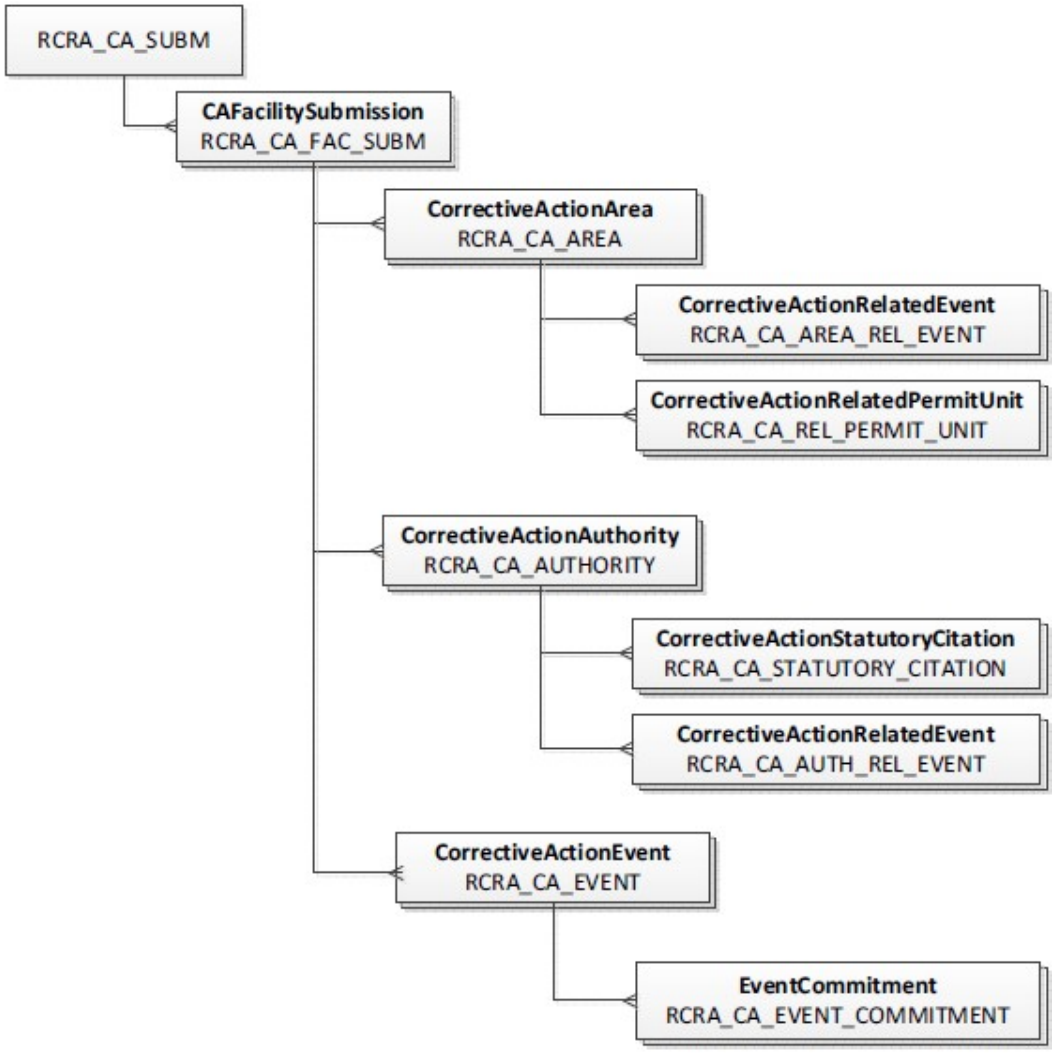
Financial Assurance (FA)



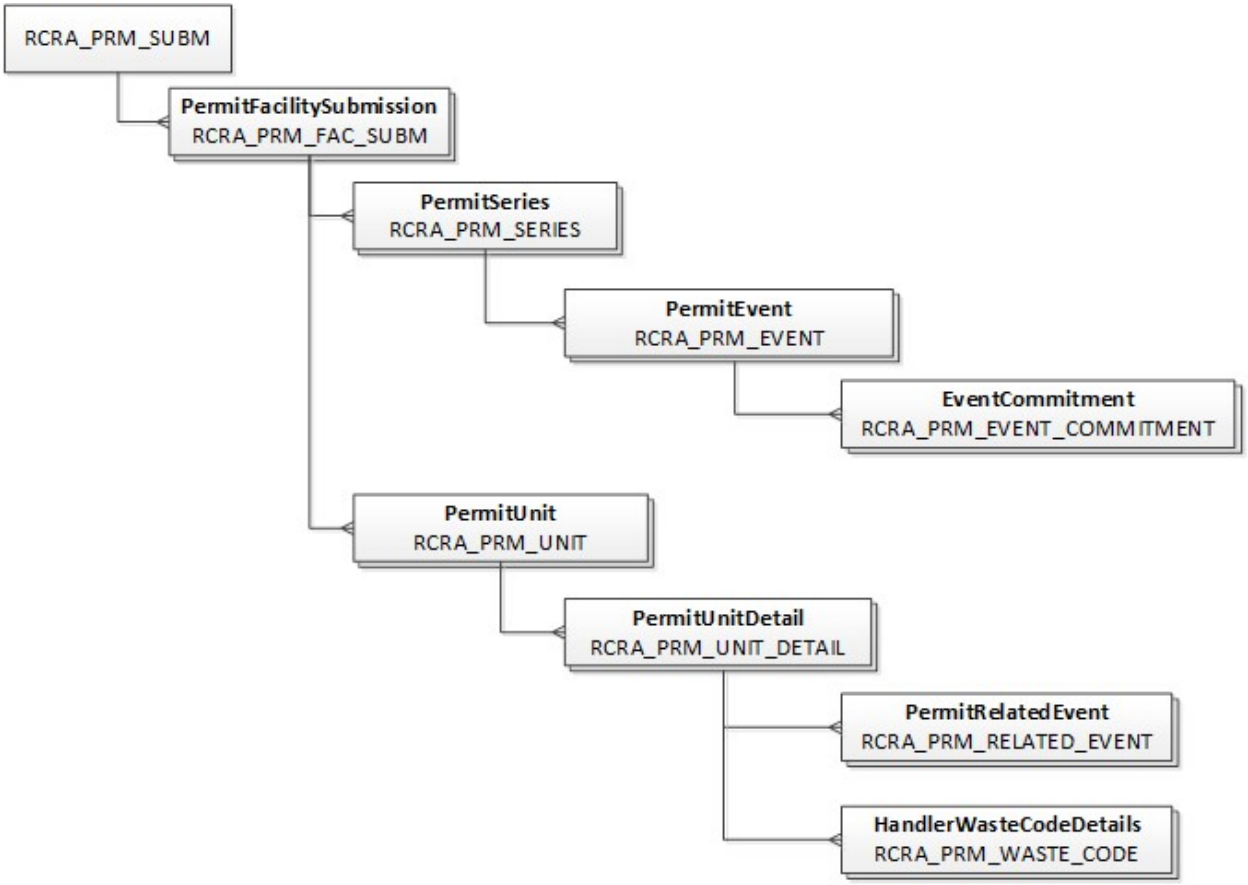
Geospatial Information (GIS)



Corrective Action (CA)



Permitting (PM)



Current Handlet (CH) – Report Universe

HazardousWasteReportUnivSubmission

- RCRA_RU_REPORT_UNIV_SUBM

ReportUniv

- RCRA_RU_REPORT_UNIV