

**Exchange Network  
Shared Schema Components:  
Usage Guide**

**LAST CALL WORKING DRAFT  
Revision Date: September 29, 2004**

**Core Reference Model Workgroup**

## Acknowledgements

The Shared Schema Components were developed by the Phase II Core Reference Model (CRM) Workgroup. This Workgroup is comprised of participants from EPA and States, along with contractor support. Phase II Core Reference Model Workgroup members include:

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## 1 Purpose of this Document

This document introduces the Exchange Network Shared Schema Components (SSC) to environmental program managers and technical staff. It illustrates the benefits of using sharable schema components based on approved EDSC data standards as an alternative to XML schema developed without such standards. In addition, it provides detailed guidance to XML schema developers on how they can incorporate the SSC into their data flow XML schema.

Environmental program managers will find Sections 1-4 helpful in conveying an overview and the benefits of Shared Schema Components.

Technical IT staff will find Sections 1-5 helpful in understanding the technical aspects of the Shared Schema Components. Section 5 in particular is beneficial to XML schema developers by providing detailed step-by-step instructions on how to incorporate Shared Schema Components into an XML schema.

A companion document to this Usage Guide is the *Exchange Network Shared Schema Components: Technical Reference*, which provides detailed information for each of the Shared Schema Components.

## 2 Shared Schema Components Background & Approach

The Exchange Network Shared Schema Components are a product of the Exchange Network's Core Reference Model, which provides groupings of related data elements and data blocks into what are referred to as Major Data Groups. These Major Data Groups more fully describe business areas, functions, and entities where EPA and its Partners have an environmental interest.

### Core Reference Model Phase I Workgroup:

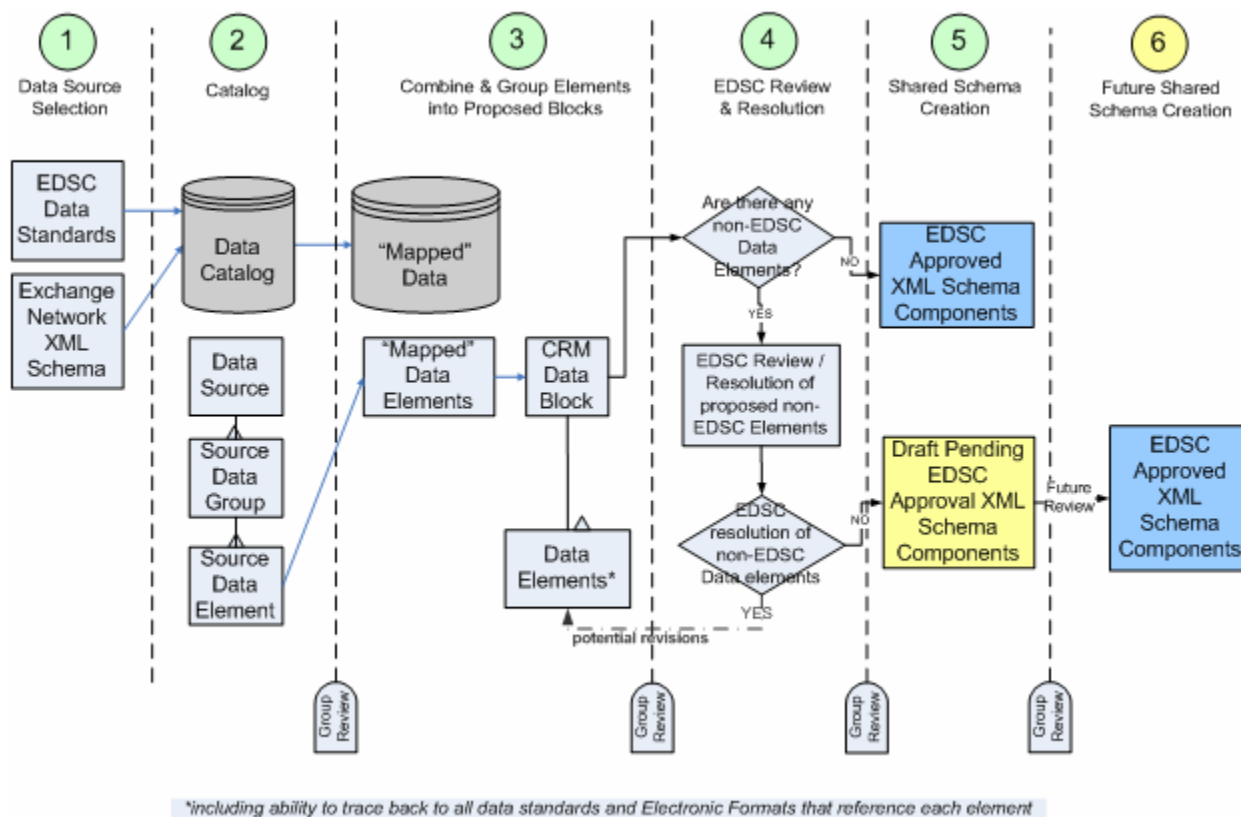
The Phase I Core Reference Model workgroup published the *Core Reference Model for the Environmental Information Exchange Network* document, version 1.0, in March 2003. This document provides a high-level depiction of the major groupings of environmental data and their relationships. Four distinct conceptual components were introduced:

- **Data Element:** A single unit of data that cannot be divided and still has useful meaning.  
Example: Data Elements are individual components of a Mailing Address, such as Locality Name, State Name, and Postal Code.
- **Data Block:** A grouping of related Data Elements that can be reused among different information exchanges.  
Example: *Mailing Address* is an example data block consisting of the data elements *Mailing Address Text*, *Supplemental Address Text*, *Mailing Address City Name*, *State Identity*, *Address Postal Code*, and *Country Identity*.
- **Compound Data Block:** A grouping similar of related Data Elements and Data Blocks. The Phase II CRM workgroup has since ceased to differentiate Compound Data Blocks from Data Blocks – all are now considered Data Blocks.
- **Major Data Group:** A logical grouping of related Data Blocks and Compound Data Blocks to fully describe business areas, functions, and entities where Exchange Network Partners have an environmental interest.  
Example: *Contact* is an example Major Data Group containing the *Mailing Address* Data Block as well as other contact-related Data Blocks (such as *Electronic Address*).

The CRM Workgroup met with members of the Environmental Data Standards Council (EDSC) in October 2003 to harmonize data element names, blocks/groups and definitions between the two entities resulting in a revised version of the CRM. In addition to the high-level depiction, the CRM document also introduced the idea of creating reusable XML schema for Exchange Network use, which led to the activities conducted by the Phase II workgroup in 2004.

### Core Reference Model Phase II Workgroup:

The Core Reference Model Phase II Workgroup convened in April 2004 with the goal of creating shared XML schema using as the basis the data blocks and major data groups identified during Phase I and subsequent harmonization efforts with EDSC. The workgroup used the following approach to develop the shared schema components.



- **Step 1: Data Source Selection:** Several “documents” were selected that included potential sources for proposed data elements that may be used to form a Shared Schema Component. For the purposes of creating the first set of SSCs, these sources are limited to EDSC data standards and Exchange Network Schema existing at the time of this exercise.
- **Step 2: Data Element Catalog:** The source of the proposed data element or group of data elements, including original data source, original source data group, data element name and definition, existing xml tag name, and data type (if available) was documented. This effort helped identify “related or similar data elements or data groups.”
- **Step 3: Creating Proposed Blocks:** This step involves the analysis of the information collected in Steps 1 and 2 to identify:
  - Data Elements to be added to an existing SSC
  - Data Elements to be deleted from an existing SSC
  - Creation of a new block

This step also:

- Identifies and documents the impact on existing EDSC Data Standards, CRM Blocks, federal Reporting Schema, federal legacy systems if applicable and other Exchange Network schema.
- This documentation effort will allow you to see the original source of each potential data element (i.e., lineage of elements).
- Creates the documentation for EDSC review of new or modified standards and blocks, including appropriately formatted data standards (terms, definitions, data format, tags and notes) and documented impacts to existing flows, schema, data standards, etc.

- **Step 4: EDSC Review and Action:** This step involves technical and public review of the proposed new or modified standard by EDSC members, including those inside and outside of the CRM workgroup.
- **Step 5: Creation of Block Content and Constraint Schema:** This step involves creation of XML Schema files, representing the shared schema components and the common Simple Content file. These SSCs are divided into two categories:
  - EDSC Approved
  - Draft Pending EDSC Approval
- **Step 6: Future Shared Schema Creation:** Shared schema components that remain as Draft Pending EDSC Approval will be reviewed by EDSC in the future.

### 3 Shared Schema Components – Overview

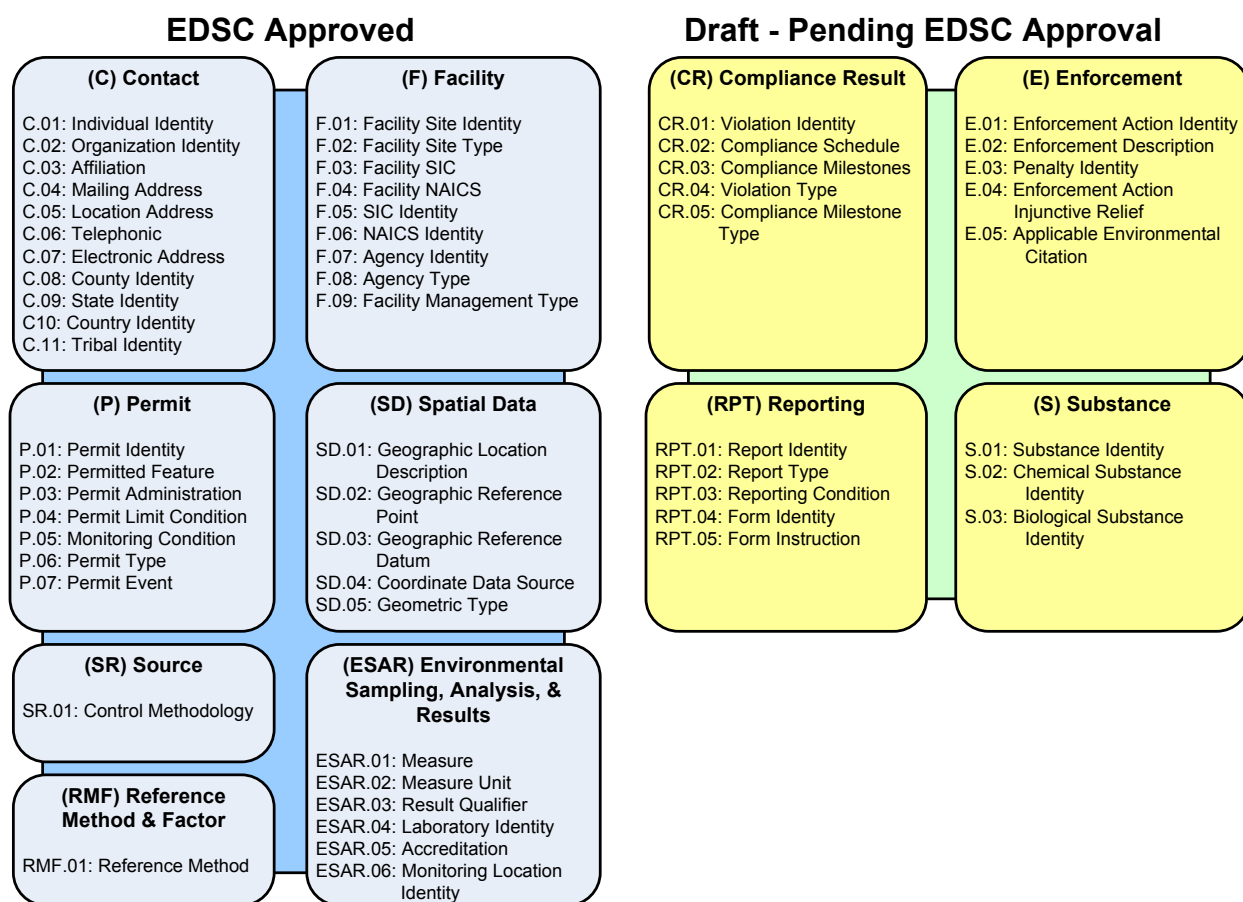
#### 3.1 What are Shared Schema Components?

Shared Schema Components are reusable XML schema that organize related data elements common to multiple environmental data flows. Shared schema components:

- Incorporate Environmental Data Standards Council (EDSC) data standards for data element grouping, data element names, and definitions
- Facilitate the creation of XML schema for environmental data flows
- Improve the quality of exchanged data

The CRM Workgroup focused on developing shared schema for which an EDSC environmental data standard already exists. At the same time, several draft SSCs were created for which either no standard exists or a standard is currently under development or modification. The initial SSCs are shown in the diagram below, categorized by their status and major data group:

## Shared Schema Components





### 3.2 Benefits of Using Shared Schema Components

There are several key benefits of using existing, adopted shared schema components. They are:

- **Flow / Schema Development:** Flow developers do not have to work out definitions, standards, or relationships for data covered by SSCs. For example, a new flow having anything to do with a regulated facility site, has a ready made list of SSC's (FacilitySiteIdentity, FacilityManagement, IndividualIdentity, etc.).
- **Stability:** To the extent that the SSCs reflect data standards, the terms and their organization within the SSCs are much more likely to retain a degree of consistency over time as compared to independently constructed flow specific schema. This not only promotes reuse, but can also be useful in making current database decisions with an eye toward future modifications and design choices.
- **Data Quality:** Data quality will increase with the consistent use of SSCs as common data are exchanged between partners. This effect is well documented: a piece of data collected for one reason is improved in quality and extent when used for another purpose. For example, the application of “release” information by the TRI program resulted in readily apparent increases in the quality of monitoring reporting in programs related to the TRI categories (air emission, wastewater, etc.).
- **Extensibility:** Flow developers can easily add value to the SSC's in cases where they notice that new data might be different from the SSC's. The effect of this is that the SSC's will grow and become more beneficial to schema developers.
- **Reusability:** For partners that have integrated data systems, flow developers can reuse their investment in data mapping efforts. For example, a flow that already maps legacy Facility Site Identity information to the SSC, such as the FRS flow, can be reused for additional flows, such as the NEI flow, without much recoding.
- **Promotion of Common Tools:** Because the SSCs will provide consistent data structures, Exchange Network partners can develop applications and databases that are more easily shared and extended by others in the Exchange Network community. These tools will then help to reinforce the usage of the SSCs.

These 58 SSCs are further described in the table below:

Shared Schema Components			
ID	Data Block	Description	File Name
C.01	Individual Identity	The particular word(s) regularly connected with a person so that you can recognize, refer to, or address him or her.	SC_IndividualIdentity_v1.0.xsd
C.02	Organization Identity	The particular word(s) regularly connected with a unique framework of authority within which a person or persons act, or are designated to act, towards some purpose.	SC_OrganizationIdentity_v1.0.xsd
C.03	Affiliation	The relationship between an individual or organization and a facility, project, or actions.	SC_Affiliation_v1.0.xsd
C.04	Mailing Address	The standard address used to send mail to an individual or organization.	SC_MailingAddress_v1.0.xsd
C.05	Location Address	The physical location of an individual or organization.	SC_LocationAddress_v1.0.xsd
C.06	Telephonic	An identification of a telephone connection.	SC_Telephonic_v1.0.xsd
C.07	Electronic Address	A location within a system of worldwide electronic communication where a computer user can access information or receive electronic mail.	SC_ElectronicAddress_v1.0.xsd
C.08	County Identity	A code and associated metadata used to identify a U.S. county or county equivalent.	SC_CountyIdentity_v1.0.xsd
C.09	State Identity	A code and associated metadata used to identify a principal administrative subdivision of the United States, Canada, or Mexico.	SC_StateIdentity_v1.0.xsd
C.10	Country Identity	A code and associated metadata used to identify a primary geopolitical unit of the world.	SC_CountryIdentity_v1.0.xsd
C.11	Tribal Identity	Identification information concerning recognized entities that possess immunities and privileges available as a federally acknowledged American Indian tribes or Alaskan Native entities by virtue of their government-to-government relationship with the Federal Government of the United States.	SC_TribalIdentity_v1.0.xsd
CR.01	Violation Identity	Basic identification information used for defining a noncompliance with one or more legally enforceable obligations by a regulated entity, as determined by a responsible authority.	SC_ViolationIdentity_v1.0.xsd
CR.02	Compliance Schedule	Information about the types of activities leading to or resulting in a determination of a regulated facility returning to compliance.	SC_ComplianceSchedule_v1.0.xsd
CR.03	Compliance Milestones	Information about the status of implementation, by Defendant/Respondent, of compliance actions required as milestones included in a Final Order or other enforcement action resolution, including Injunctive Relief, Supplemental Environmental Projects (SEP), and Penalty or Cost Recovery payments required.	SC_ComplianceMilestones_v1.0.xsd
CR.04	Violation Type Code	A code and associated metadata used to identify a type or class of violation.	SC_ViolationType_v1.0.xsd
CR.05	Compliance Milestone Type Code	A code and associated metadata used to identify a type of compliance milestone.	SC_ComplianceMilestoneType_v1.0.xsd
E.01	Enforcement Action Identity	Basic identification information used for an enforcement action.	SC_EnforcementActionIdentity_v1.0.xsd
E.02	Enforcement Description	Information used to describe enforcement.	SC_EnforcementDescription_v1.0.xsd
E.03	Penalty Identity	Basic identification information used for an enforcement penalty.	SC_PenaltyIdentity_v1.0.xsd
E.04	Enforcement Action Injunctive Relief	Information about any injunctive relief sought through, and/or required pursuant to, an Enforcement Action, but not including penalties, cost recovery, and Supplemental Environmental Project (SEP) obligations. Penalties, cost recovery and SEPs, are addressed in separate categories.	SC_EnforcementActionInjunctiveRelief_v1.0.xsd

Shared Schema Components			
ID	Data Block	Description	File Name
E.05	Applicable Environmental Citation	Local, State, or Federal environmental citation, such as 40 CFR.	SC_ApplicableEnvironmentalCitation_v1.0.xsd
ESAR.01	Measure	Identifies the value and the associated units of measure for measuring the observation or analytical result value.	SC_Measure_v1.0.xsd
ESAR.02	Measure Unit Code	A code and associated metadata used to identify a unit of measurement.	SC_MeasureUnit_v1.0.xsd
ESAR.03	Result Qualifier Code	A code and associated metadata used to identify any qualifying issues that affect results.	SC_ResultQualifier_v1.0.xsd
ESAR.04	Laboratory Identity	Basic identification information for an entity or person responsible for analysis of substances.	SC_LaboratoryIdentity_v1.0.xsd
ESAR.05	Accreditation	Information regarding the accreditation of a facility, laboratory or organization	SC_Accreditation_v1.0.xsd
ESAR.06	Monitoring Location Identity	Basic identification information for the location/site that is monitored or used for sampling.	SC_MonitoringLocationIdentity_v1.0.xsd
F.01	Facility Site Identity	Basic information used by an organization to identify a facility or site.	SC_FacilitySiteIdentity_v1.0.xsd
F.02	Facility Site Type	A code and associated metadata used to represents the type of site a facility occupies.	SC_FacilitySiteType_v1.0.xsd
F.03	Facility SIC	The Standard Industrial Classification (SIC), or type of business activity, occurring at the facility site.	SC_FacilitySIC_v1.0.xsd
F.04	Facility NAICS	The North American Industry Classification System (NAICS) code, or type of industrial activity, occurring at the facility site.	SC_FacilityNAICS_v1.0.xsd
F.05	SIC Identity	The SIC code set used to classify the economic activities of most of the industries or kinds of business establishments in our economy. The SIC classification system defines economic activity into 10 divisions. These are further broken down into numeric codes that define major groups, industrial groups, and industries. Descriptive text is also available to define industrial subdivisions.	SC_SICIdentity_v1.0.xsd
F.06	NAICS Identity	The NAICS code set used to classify the economic activities of business establishments, grouped hierarchically into economic sectors, economic subsectors, industry groups, and industries. Industry classifications are further subdivided into national classifications that are specific to the needs of each country.	SC_NAICSIdentity_v1.0.xsd
F.07	Agency Identity	A code and associated metadata used to identify a federal, state, or local agency.	SC_AgencyIdentity_v1.0.xsd
F.08	Agency Type Code	A code and associated metadata used to identify the type of federal, state, or local agency.	SC_AgencyType_v1.0.xsd
F.09	Facility Management Type Code	A code and associated metadata used to identify the type of operation management currently at a facility.	SC_FacilityManagementType_v1.0.xsd
P.01	Permit Identity	Identification information about the permit and the organization responsible for issuing or granting the permit.	SC_PermitIdentity_v1.0.xsd
P.02	Permitted Feature	Information about the unit, physical structure, feature, or process described in a permit.	SC_PermittedFeature_v1.0.xsd
P.03	Permit Administration	Administrative information about the permit.	SC_PermitAdministration_v1.0.xsd
P.04	Permit Limit Condition	Regulatory limit for a given release that is allowable under a permit. It also contains requirement information used to describe the conditions for which a release limit will apply.	SC_PermitLimitCondition_v1.0.xsd
P.05	Monitoring Condition	Administrative information that describes the monitoring requirements.	SC_MonitoringCondition_v1.0.xsd
P.06	Permit Type	A code and associated metadata used to identify the type of permit issued or granted to a regulated entity.	SC_PermitType_v1.0.xsd

Shared Schema Components			
ID	Data Block	Description	File Name
P.07	Permit Event	Identifies dates associated with a permit or permit application process.	SC_PermitEvent_v1.0.xsd
RMF.01	Reference Method	Identifies the procedures, processes, and references required to determine the methods used to obtain a result.	SC_ReferenceMethod_v1.0.xsd
RPT.01	Report Identity	Basic identification information used for an official account or statement.	SC_ReportIdentity_v1.0.xsd
RPT.02	Report Type Code	A code and associated metadata used to identify a type of report.	SC_ReportType_v1.0.xsd
RPT.03	Reporting Condition	Data relating to a series of required reports.	SC_ReportingCondition_v1.0.xsd
RPT.04	Form Identity	Basic identification information used to describe a paper or electronic document with blanks for the insertion of details or information.	SC_FormIdentity_v1.0.xsd
RPT.05	Form Instruction	Detailed instructions on filling out forms.	SC_FormInstruction_v1.0.xsd
S.01	Substance Identity	Identification information for a chemical, biological, or radiological substance	SC_SubstanceIdentity_v1.0.xsd
S.02	Chemical Substance Identity	The Chemical Identification Block provides for the use of common identifiers for all chemical substances regulated or monitored by environmental programs.	SC_ChemicalSubstanceIdentity_v1.0.xsd
S.03	Biological Substance Identity	The Biological Identification Block provides for the use of common identifiers for all biological organisms regulated or monitored by environmental programs.	SC_BiologicalSubstanceIdentity_v1.0.xsd
SD.01	Geographic Location Description	Extensive list of geographic identifiers used to clearly mark an object's precise location.	SC_GeographicLocationDescription_v1.0.xsd
SD.02	Geographic Reference Point Code	A code and associated metadata used to identify a geographic reference point.	SC_GeographicReferencePoint_v1.0.xsd
SD.03	Geographic Reference Datum	Information that describes the reference datum used in determining geographic coordinates.	SC_GeographicReferenceDatum_v1.0.xsd
SD.04	Coordinate Data Source Code	A code and associated metadata used to identify a data source of coordinate data.	SC_CoordinateDataSource_v1.0.xsd
SD.05	Geometric Type Code	A code and associated metadata used to identify a geometric entity represented by one point or a sequence of points.	SC_GeometricType_v1.0.xsd
SR.01	Control Methodology	A process and/or tool used to manage storage, disposal, treatment, or other handling protocols designed for and/or used.	SC_ControlMethodology_v1.0.xsd

### 3.3 Structure of Shared Schema Components

A typical shared schema component (e.g. Individual Identity) will consist of at least two XML schema files:

- Common Simple Content reference file (SC\_SimpleContent\_v1.0.xsd)
- Shared schema component file (e.g SC\_IndividualIdentity\_v1.0.xsd)

#### 3.3.1 Simple Content File:

The SC\_SimpleContent\_v1.0.xsd file contains two major sections:

- **Simple or Complex Type Definition:** This section defines a complete listing of data types to which all data elements defined in the shared schema components can be referenced. These are called either Simple or Complex data types, depending on the level of specificity. All Simple and Complex data types defined in this section are an extension of W3C<sup>1</sup> built-in data types (called primitive types). They are extended by placing the following types of restrictions on the primitive data types:

- enumeration: a constraint on a data type to a specified set of values
- minlength or maxlength: A restriction on the minimum or maximum number of characters or numbers (depending on the data type).
- Attribute: A data type may have attributes, which provide the ability to associate defined meta data with a data type. (For example, an attribute commonly used in the SSCs is *Code List Identifier*, which provides the ability to define a Code List from which a particular code is defined.)

If the item does not have attributes, then a simple type definition was created; if the item has attributes, then a complex type definition was created.

```
<xsd:simpleType name="FederalFacilityIndicatorDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="Y" />
    <xsd:enumeration value="N" />
    <xsd:enumeration value="" />
  </xsd:restriction>
</xsd:simpleType>
```

- **Data element definitions:** A set of global elements is created that reference each of the simple or complex types defined above. An annotation that is the data element definition, typically from the corresponding EDSC data standard, is included along with the data element definition. These elements can then be referenced in the shared schema components.

```
<xsd:element name="FederalFacilityIndicator" type="sc:FederalFacilityIndicatorDataType">
  <xsd:annotation>
    <xsd:documentation>An indicator identifying facilities owned or
operated by a federal government unit.
    </xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

<sup>1</sup> World Wide Web Consortium (<http://www.w3.org>)

### 3.3.2 Shared Schema Component Files:

A separate file is created for each of the 58 shared schema components. A typical file will include the following components:

- **Includes:** The SSC references other files that contain elements that are used by the SSC. This will always include the SimpleContent file, and may include other schema files as well:

```
<xsd:include schemaLocation="SC_SimpleContent_v1.0.xsd" />
<xsd:include schemaLocation="SC_FacilitySiteType_v1.0.xsd" />
```

- **Annotation:** Annotation is provided at the top of the SSC using the following format:

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name: SC_FacilitySiteIdentity_v1.0.xsd
    Schema Identification: F.01
    Current Version Available At: http://www.exchangenetwork.net/registry/SC
    Description: Basic information used by an organization to identify a facility or site.
    Application: Exchange Network Shared Schema Components
    Developed by: Core Reference Model (CRM) Workgroup
    Point of Contact: Douglas Timms, enfoTech & Consulting, Inc.
  </xsd:documentation>
</xsd:annotation>
```

- **Complex Type:** A complex type is defined, which includes the elements (referenced from the SimpleContent file) that comprise the Shared Schema Component, as shown in the example below:

```
<xsd:complexType name="FacilitySiteIdentityDataType">
  <xsd:sequence>
    <xsd:element minOccurs="0" maxOccurs="1" ref="sc:FacilitySiteIdentifier" />
    <xsd:element minOccurs="0" maxOccurs="1" ref="sc:FacilitySiteName" />
    <xsd:element minOccurs="0" maxOccurs="1" ref="sc:FacilitySiteType" />
    <xsd:element minOccurs="0" maxOccurs="1" ref="sc:FederalFacilityIndicator" />
  </xsd:sequence>
</xsd:complexType>
```

- **Data Element Definition:** A data element is created so that this shared schema component can be referenced by other schema.

```
<xsd:element name="FacilitySiteIdentity"
  type="sc:FacilitySiteIdentityDataType">
  <xsd:annotation>
    <xsd:documentation>Basic information used by an organization to
      identify a facility or site.
    </xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

## 4 How to Incorporate Shared Schema Components in Your Schema – A Step-by-Step Guide

### 4.1 Overview

When incorporating the Shared Schema Components in a new schema development effort it may be necessary to customize them to meet local needs. In order to help schema developers customize the Shared Schema Components in accordance with the Exchange Network XML Architecture Guidelines, some common customization examples are provided. The examples show the schema developer how to:

- Incorporate Shared Schema Components
- Make a Data Element Required
- Add a Data Element
- Remove a Data Element
- Remove and Add a Data Element
- Add a Character Length Restriction on a Data Element
- Add an Enumeration List to a Data Element
- Add a Pattern Restriction on a Data Element
- Change an Existing Enumeration List for a Data Element

Details on each of these customization techniques are provided in section 4.3. All customization should be done in accordance with the Exchange Network XML Architecture. Some of these agreements are repeated in section 4.2 for easy reference. The full XML Architecture is provided on the Exchange Network website (<http://www.exchangenetwork.net>).

### 4.2 Excerpts from Technical Resources Group (TRG) XML Architecture Agreements

The design of the Shared Schema Components and the customization techniques outlined in later sections, are guided by the XML Architecture. They also build on, and slightly revise the *XML Design Rules and Conventions for the Environmental Information Exchange Network*. The XML Architecture (version 1.0) document and a one-page *Schema Developers Guide to Network XML* are available on the Exchange Network website ([www.exchangenetwork.net](http://www.exchangenetwork.net)). Because the XML Architecture documentation have been developed in parallel with this document, these excerpts from the XML Architecture are provided here (and referenced in the XML Architecture) to improve readability.

The XML Architecture anticipates the creation of an ever growing set of shared elements and type definitions (shared components). As the process for developing, soliciting and approving shared components matures, the components themselves will become more numerous, complex and broader in scope. These larger components will reference multiple other components and establish their own complex types, with multiple levels of hierarchy. The guidelines described here attempt to anticipate and provide the tools to manage this growth. As a starting point, however, the shared components are, for the most part small and focused; most have only one level of hierarchy and only a few make use of other shared components. Consistent application of these guidelines, even for these simple components, will lay the critical groundwork for future compatibility as the number and complexity of the components grow.

The basic principle behind shared components is for developers to “look before you write”. The XML Architecture *Recommended Search Path for Developers* (see Figure 4.1) provides recommendations regarding where developers should look when developing schema.

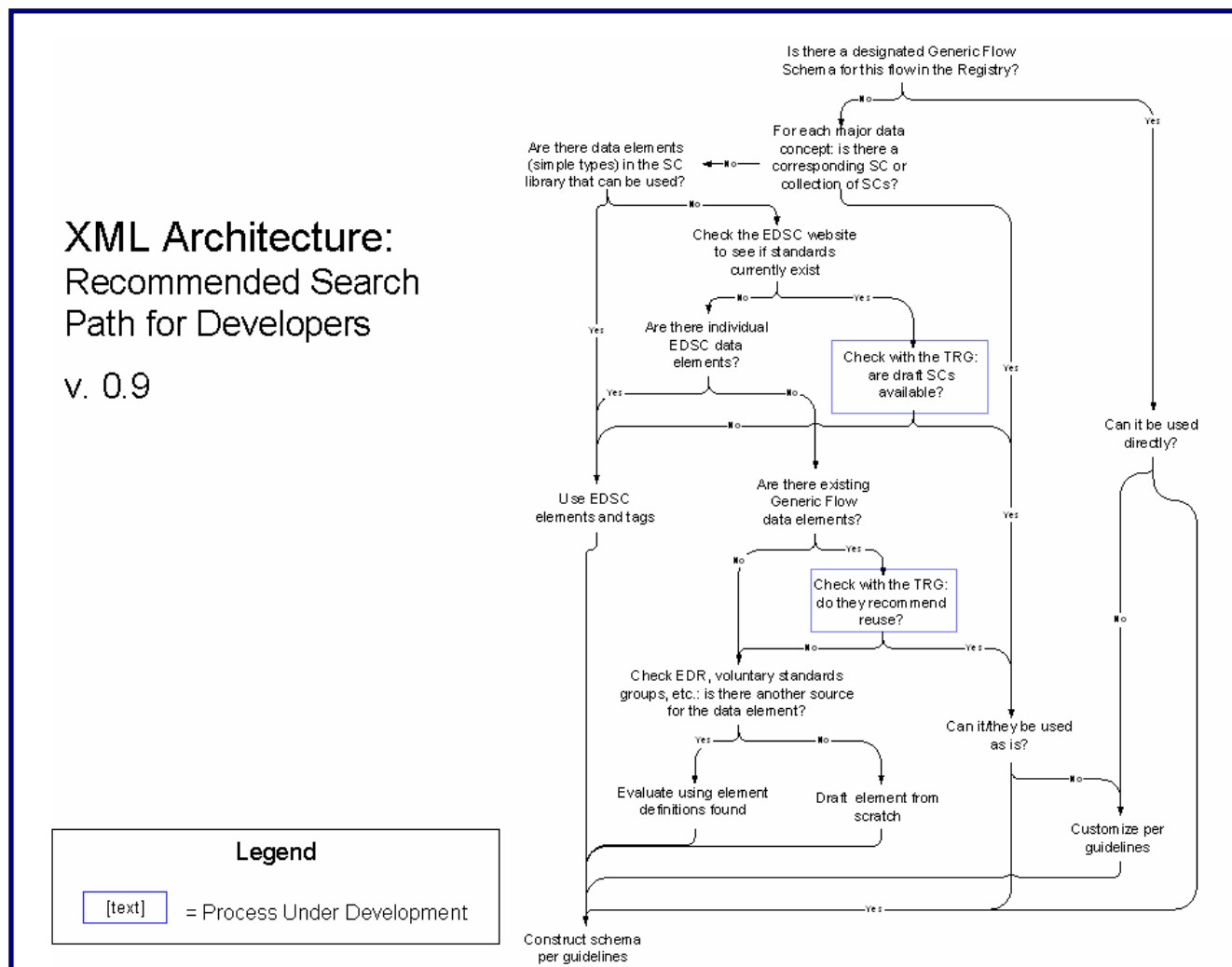


Figure 4.1: XML Architecture Recommended Search Path for Developers

The steps are summarized below:

- 1) Identify the “highest” level (i.e. the most complex) shared schema or schema fragment that can be reused practically. In some cases this will be an entire Generic Flow Schema, in others it will be only one shared component or element
- 2) Customize (if needed) and re-use that component according the XML Architecture Guidelines identified below.
- 3) Where there is no re-usable component, use the recommended sources (EDSC website, US EPA EDR, and standards organizations) to identify existing data elements. Where new element/types must be created “from scratch”, developers should ensure that they are not duplicating existing shared components.



The success of these guidelines will depend on developers making reasonable efforts to determine *practical reuse*. If reuse, according to the Guidelines below, of a shared component is a semantically clear way to communicate the meaning of a data concept<sup>2</sup> at hand, it should be reused, not reinvented. If, however, the modifications needed to allow reuse of a candidate component are so extensive that they are awkward and/or confusing, then a new element and name should be created. For example, the addition of one element to a shared component should be treated as a customization rather than a reinvention. Conversely, it is impractical to reuse only two of ten elements in a shared component by eliminating the other eight. In this case the developer should simply use the base simple elements/types directly in their schema. This is the practical level of reuse.

Shared component development, along with the management framework for their development and application, are ongoing processes. Success for all of these will depend upon good communication between schema developers, the TRG, and the EDSC. For example, Figure 4.1 includes a step for developers to contact the EDSC and TRG if they find standards but no shared components, in this case developers may be able to obtain and help test candidate components, or (with support) craft the relevant components themselves. This kind of communication will also help feed new schema development efforts back into the collective repository through a managed process. The EDSC and NSB are working together to make discovery, use and contribution of schema as straightforward for developers as possible. As one near term step, the TRG will also be establishing a simple “Schema Development Tracker” on the Exchange Network website, listing the known schema development activities underway.

## 4.2.1 Overview of XML Architecture Guidelines Applicable to Shared Components

### 4.2.1.1 Reuse of Shared Components

Shared Components are the core building blocks of the XML Architecture. Their direct reuse is defined in the guideline below:

#### [SC1] Uncustomized Shared Components

Shared Components have a fixed name, namespace (**urn:us:net:exchangenetwork:sc:1:0**), and namespace prefix (**sc:**). When Shared Components are reused in Schema, they always retain this name, namespace and namespace prefix. Elements and types in this namespace must not be modified.

The version information (1:0) carried in this namespace, and its use for indicating future changes, is described further in the *XML Architecture Guidelines* document. As described there, this namespace (**urn:us:net:exchangenetwork:sc:1:0**) will be permanent and stable, developers should not hesitate to reference/implement these components out of concern that they will change. The remaining Guidelines describe how Shared Components may be modified, and what changes to their names and namespaces are required.

### 4.2.1.2 Compatible Customization of Shared Components

By default, most Shared Components are relatively “open”. Most elements are optional, occurrences are unbounded, and there are few facet constraints. Where a developer wishes to reuse a shared

<sup>2</sup> Data standards developers use the term “data concept” to refer to the underlying concept to which the standard references “permit” or “facility” are examples of data concepts.

component or element, but add constraints, they should do so by creating a new element with the same name as the Shared Components but a different namespace. This is termed a “compatible” customization; by definition it means that all instances that validate against the newly created element would also validate against the original SC.

These uses/changes of a Shared Component require that a new name (and namespace) be used. This provides predictability to users who encounter identically named elements in the namespace. A corollary of this Guideline is that developers should NOT use the names reserved by the shared components for elements in their own namespaces UNLESS they comply with this Guideline. This Guideline is stricter than it looks, it enforces the traditional notion of data standards, even across flows/domains with the network “family” of namespaces (designated with the urn:us:net:exchangenetwork: namespace root). This Guideline is described in further detail below.

**[SC2] Compatibly Customizing Shared Components**

To constrain (but not otherwise change) a Shared Component, a new type and element of that type is created with the same name as the Shared Component but in the flow/domain namespace. Compatible customizations are: adding or further constraining existing facet restrictions, making optional elements mandatory or eliminating them (e.g changing its cardinality). Modifications classified as “compatibly customized” are limited to modifications that would provide all instances that validate against the newly created schema element, should also validate against the original Shared Schema Component element.

**4.2.1.3 Major Customizations of Shared Components**

As identified above, developers will often need to make major customization of shared components (i.e. beyond that defined as “compatible”). These include the addition of elements and removal of facet restrictions. For these customizations, the XML Architecture requires that a new type/element name be added as a prefix to define the new namespace. The principle behind this Guideline is that natural extensions or elaborations of existing components should inherit their name root, but add that root with the relevant domain or flow prefix. Developers should exercise judgment in determining when the addition or elimination of information from/to a shared component has exceeded a natural extension and merits creation of a wholly NEW element, with a new, different name.

**[SC3] Major Customizations of Shared Components**

Major customizations of shared components (i.e. those that would no longer validate against their original base types) are implemented by defining new elements, in the flow/domain namespace, using the shared component as its base. The name of the new element/type should be created by adding a flow/domain prefix to the original shared component name. Where the customization reflects a major change or large extension of the scope of the original shared components, developers should create an entirely new name for derived element/type, per the Guideline [SC4].

## 4.3 Shared Schema Components Customization Techniques

### 4.3.1 Incorporate Shared Schema Components

In order to demonstrate how to incorporate Shared Schema Components into a new schema, consider the simple case of creating a schema to exchange Individual Contact Information. The schema developer should take the following steps:

1. Create a new .XSD file using the following file naming convention:  
“YourNamespacePrefix\_ContactPoint\_v1.0.xsd”
2. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

3. Import the necessary Shared Schema Components into the new XSD file.

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_Telephonic_v1.0.xsd"/>
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_ElectronicAddress_v1.0.xsd"/>
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_Affiliation_v1.0.xsd"/>
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_IndividualIdentity_v1.0.xsd"/>
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_MailingAddress_v1.0.xsd"/>
```

4. Provide documentation describing the schema.

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_ContactPoint_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Schema used to transfer Individual contact information
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

5. Create a Complex Type. Reference the elements for Shared Schema Component Complex Types.

```
<xsd:complexType name="ContactPointDataType">
  <xsd:sequence>
    <xsd:element ref="sc:IndividualIdentity"/>
    <xsd:element ref="sc:MailingAddress"/>
    <xsd:element ref="sc:Telephonic"/>
    <xsd:element ref="sc:ElectronicAddress"/>
    <xsd:element ref="sc:Affiliation"/>
  </xsd:sequence>
</xsd:complexType>
```

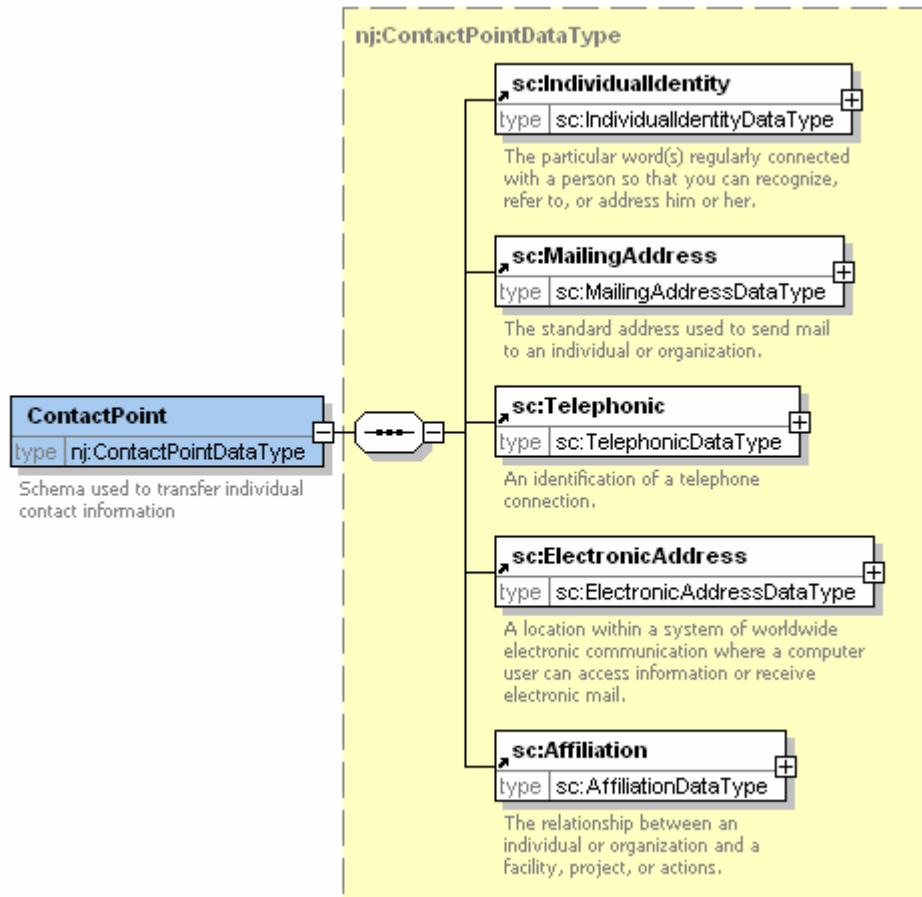
## 6. Create an element whose type is ContactPointDataType

```

<xsd:element name="ContactPoint" type="nj:ContactPointDataType">
  <xsd:annotation>
    <xsd:documentation>Schema used to transfer individual contact information</xsd:documentation>
  </xsd:annotation>
</xsd:element>

```

Combining the sections above will result in the schema block shown below:



To view the XML Schema file used for this example, please refer to Section 5.1.

### 4.3.2 Make a Data Element Required

In order to change the minimum and maximum occurrences of a data element contained in a Shared Schema Component, perform the following steps:

1. Create a new .XSD file using the following file naming convention:  
“YourNamespacePrefix\_SSCBlockName\_SSCVersion.xsd”
2. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

3. Import the Shared Schema Component into the new XSD file

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_IndividualIdentity_v1.0.xsd"/>
```

4. Provide documentation describing the schema

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_IndividualIdentity_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Customization of the SC_IndividualIdentity_v1.0.xsd
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

5. Perform a restriction of the Shared Schema Component Complex Type and change the occurrence indicator(s) for the Data Element(s)

```

<xsd:complexType name="IndividualIdentityDataType">
  <xsd:complexContent>
    <xsd:restriction base="sc:IndividualIdentityDataType">
      <xsd:sequence>
        <xsd:element ref="sc:IndividualIdentifier" minOccurs="1" maxOccurs="1"/>
        <xsd:element ref="sc:IndividualTitleText" minOccurs="0"/>
        <xsd:element ref="sc:NamePrefixText" minOccurs="0"/>
        <xsd:choice minOccurs="0">
          <xsd:element ref="sc:IndividualFullName" minOccurs="0"/>
          <xsd:sequence minOccurs="0">
            <xsd:element ref="sc:FirstName" minOccurs="0"/>
            <xsd:element ref="sc:MiddleName" minOccurs="0"/>
            <xsd:element ref="sc:LastName" minOccurs="0"/>
          </xsd:sequence>
        </xsd:choice>
        <xsd:element ref="sc:NameSuffixText" minOccurs="0"/>
      </xsd:sequence>
    </xsd:restriction>
  </xsd:complexContent>
</xsd:complexType>

```

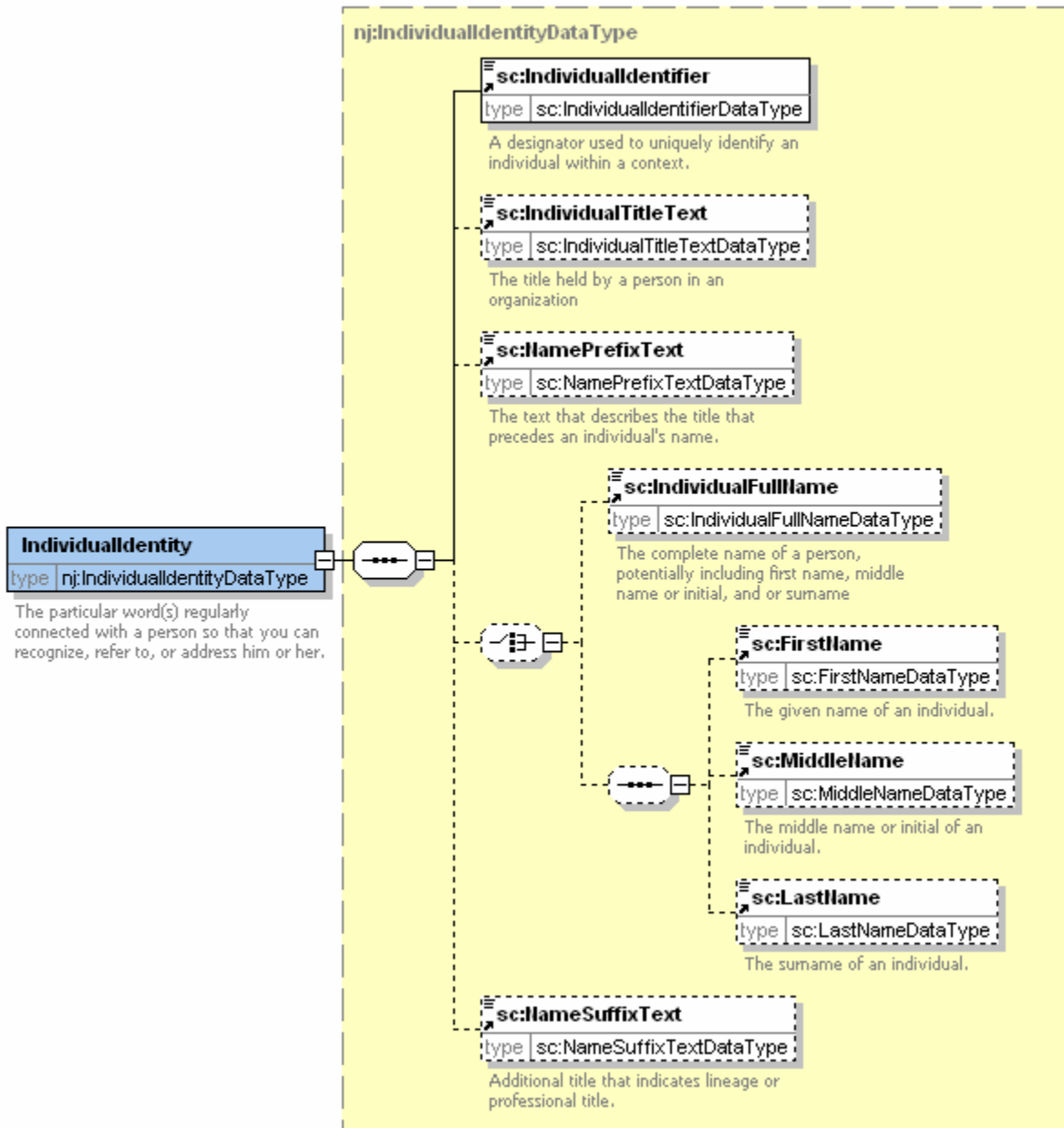
## 6. Create a Data Element whose type is: IndividualIdentityDataType

```

<xsd:element name="IndividualIdentity" type="nj:IndividualIdentityDataType">
  <xsd:annotation>
    <xsd:documentation>The particular word(s) regularly connected with a person so that you can recognize, refer to, or address him or her.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

```

Combining the sections above will result in the schema block shown below:



To view the XML Schema file used for this example, please refer to Section 5.2.

### 4.3.3 Add a Data Element

In order to add a data element to a Shared Schema Component, perform the following steps:

1. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SimpleContent\_SSCVersion.xsd”
2. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

3. Provide documentation describing the schema

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_SimpleContent_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Simple Content file for New Jersey common simple types and data elements.
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

4. Create a SimpleType for your new Data Element

```
<xsd:simpleType name="LaboratoryNameDataType">
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
```

5. Create your new Data Element

```
<xsd:element name="LaboratoryName" type="nj:LaboratoryNameDataType">
  <xsd:annotation>
    <xsd:documentation> The name used by the laboratory for conducting business</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

6. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SSCBlockName\_SSCVersion.xsd”
7. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```



8. Import the Shared Schema Component into the new XSD file, and include your Simple Content file

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_LaboratoryIdentity_v1.0.xsd"/>
<xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
```

9. Provide documentation describing the schema

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_LaboratoryIdentity_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Customization of the SC_LaboratoryIdentity_v1.0.xsd
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

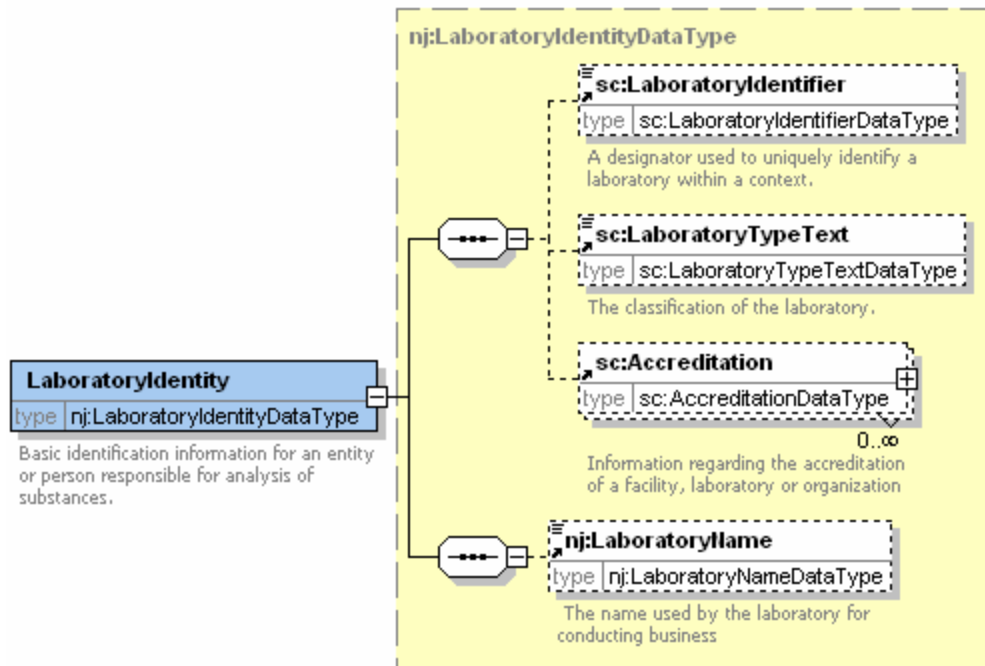
10. Perform an extension of the Shared Schema Component Complex Type and add your new Data Element

```
<xsd:complexType name="LaboratoryIdentityDataType">
  <xsd:complexContent>
    <xsd:extension base="sc:LaboratoryIdentityDataType">
      <xsd:sequence>
        <xsd:element ref="nj:LaboratoryName" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
```

11. Create a Data Element whose type is LaboratoryIdentityDataType

```
<xsd:element name="LaboratoryIdentity" type="nj:LaboratoryIdentityDataType">
  <xsd:annotation>
    <xsd:documentation>Basic identification information for an entity or person responsible for analysis of
      substances.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

Combining the sections above will result in the schema block shown below:



To view the XML Schema file used for this example, please refer to Section 5.3.

#### 4.3.4 Remove a Data Element

In order to remove a data element from a Shared Schema Component, perform the following steps:

1. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SSCBlockName\_SSCVersion.xsd”
2. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

3. Import the Shared Schema Component into the new XSD file

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_Affiliation_v1.0.xsd"/>
```

4. Provide documentation describing the schema

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_Affiliation_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Customization of the SC_Affiliation_v1.0.xsd
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

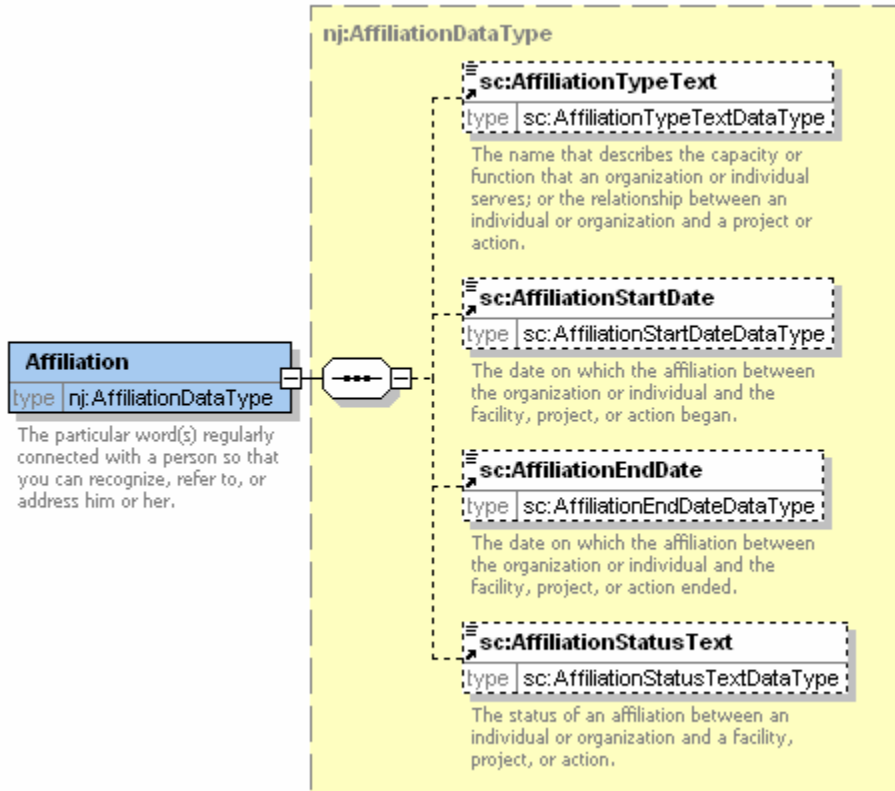
5. Perform a restriction of the Shared Schema Component Complex Type and remove the Data Element.

```
<xsd:complexType name="AffiliationDataType">
  <xsd:complexContent>
    <xsd:restriction base="sc:AffiliationDataType">
      <xsd:sequence>
        <xsd:element ref="sc:AffiliationTypeText" minOccurs="0"/>
        <xsd:element ref="sc:AffiliationStartDate" minOccurs="0"/>
        <xsd:element ref="sc:AffiliationEndDate" minOccurs="0"/>
        <xsd:element ref="sc:AffiliationStatusText" minOccurs="0"/>
      </xsd:sequence>
    </xsd:restriction>
  </xsd:complexContent>
</xsd:complexType>
```

6. Create a Data Element whose type is: AffiliationDataType

```
<xsd:element name="Affiliation" type="nj:AffiliationDataType">
  <xsd:annotation>
    <xsd:documentation>The particular word(s) regularly connected with a person so that you can recognize, refer
    to, or address him or her.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

Combining the sections above will result in the schema block shown below:



To view the XML Schema file used for this example, please refer to Section 5.4.

### 4.3.5 Remove and Add a Data Element

In order to remove and add a data element to a Shared Schema Component, perform the following steps:

1. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SimpleContent\_SSCVersion.xsd”
  - b. If the file has already been created use the existing SimpleContent file
2. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

3. Provide documentation describing the schema

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_SimpleContent_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Simple Content file for New Jersey common simple types and data elements.
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

4. Create a SimpleType for your new Data Element

```
<xsd:simpleType name="FormEffectiveDateDataType">
  <xsd:restriction base="xsd:date"/>
</xsd:simpleType>
```

5. Create your new Data Element

```
<xsd:element name="FormEffectiveDate" type="nj:FormEffectiveDateDataType">
  <xsd:annotation>
    <xsd:documentation> The date when the reporting form became effective.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

6. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SSCBlockName\_SSCVersion.xsd”
7. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

- Import the Shared Schema Component into the new XSD file, and include your Simple Content file

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_FormIdentity_v1.0.xsd"/>
<xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
```

- Provide documentation describing the schema

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_FormIdentity_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Customization of the SC_FormIdentity_v1.0.xsd
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

- Perform a temporary extension of the Shared Schema Component Complex Type and add your new Data Element

```
<xsd:complexType name="TempFormIdentityDataType">
  <xsd:complexContent>
    <xsd:extension base="sc:FormIdentityDataType">
      <xsd:sequence>
        <xsd:element ref="nj:FormEffectiveDate" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
```

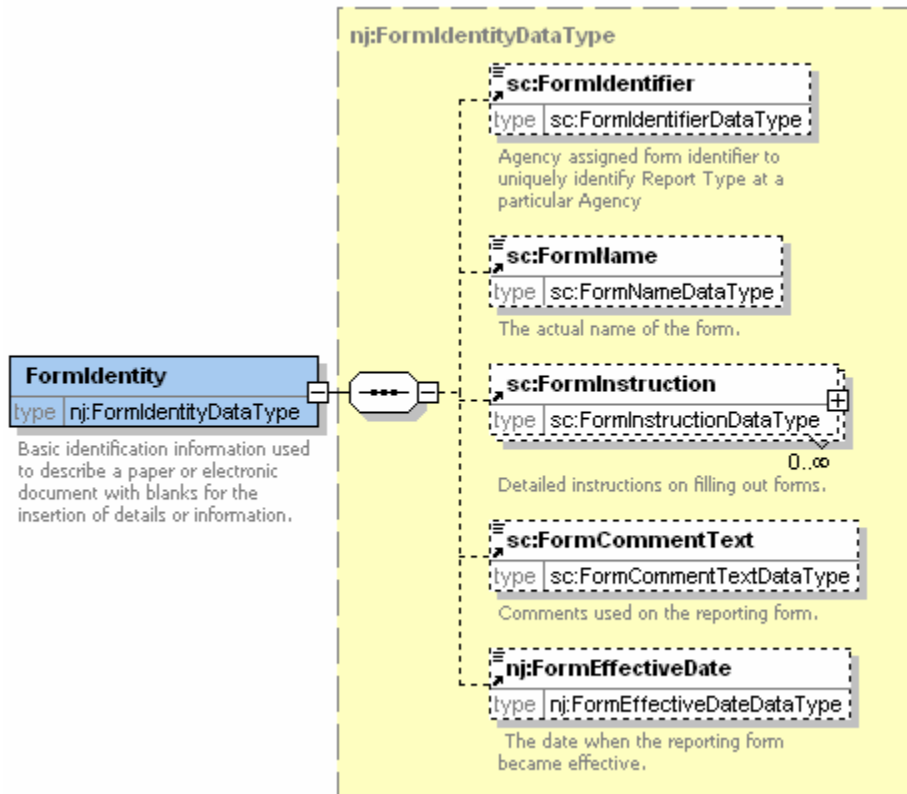
- Perform a restriction of the Shared Schema Component Complex Type and remove the Data Element.

```
<xsd:complexType name="FormIdentityDataType">
  <xsd:complexContent>
    <xsd:restriction base="nj:TempFormIdentityDataType">
      <xsd:sequence>
        <xsd:element ref="sc:FormIdentifier" minOccurs="0"/>
        <xsd:element ref="sc:FormName" minOccurs="0"/>
        <xsd:element ref="sc:FormInstruction" minOccurs="0" maxOccurs="unbounded"/>
        <xsd:element ref="sc:FormCommentText" minOccurs="0"/>
        <xsd:element ref="nj:FormEffectiveDate" minOccurs="0"/>
      </xsd:sequence>
    </xsd:restriction>
  </xsd:complexContent>
</xsd:complexType>
```

- Create a Data Element whose type is FormIdentityDataType

```
<xsd:element name="FormIdentity" type="nj:FormIdentityDataType">
  <xsd:annotation>
    <xsd:documentation>Basic identification information used to describe a paper or electronic document with
    blanks for the insertion of details or information.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

Combining the sections above will result in the schema block shown below:



To view the XML Schema files used for this example, please refer to Sections 5.5 and 5.10.

#### 4.3.6 Add a Character Length Restriction on a Data Element

In order to add a character length restriction on a Data Element contained in a Shared Schema Component, perform the following steps:

1. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SimpleContent\_SSCVersion.xsd”
  - b. If the file has already been created use the existing SimpleContent file.
2. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangegenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangegenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangegenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

3. Import the Shared Schema Component SimpleContent File.

```
<xsd:import namespace="urn:us:net:exchangegenetwork:sc:1:0" schemaLocation="SC_SimpleContent_v1.0.xsd"/>
```

## 4. Provide documentation describing the schema.

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_SimpleContent_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Simple Content file for New Jersey common simple types and data elements.
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

## 5. Create a SimpleType, based on the existing Shared Schema Component SimpleType, for the Data Element you wish to place a character length restrict on.

```
<xsd:simpleType name="FacilitySiteNameDataType">
  <xsd:restriction base="sc:FacilitySiteNameDataType">
    <xsd:maxLength value="255"/>
  </xsd:restriction>
</xsd:simpleType>
```

## 6. Create a Data Element with the same name as the existing Data Element.

```
<xsd:element name="FacilitySiteName" type="nj:FacilitySiteNameDataType">
  <xsd:annotation>
    <xsd:documentation>The public or commercial name of a facility site (i.e., the full name that commonly
      appears on invoices, signs, or other business documents, or as assigned by the state
      when the name is ambiguous).</xsd:documentation>
  </xsd:annotation>
```

7. Create a new .XSD file using the following file naming convention:  
“YourNamespacePrefix\_SSCBlockName\_SSCVersion.xsd”

## 8. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
  xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
  version="1.0">
```

## 9. Import the Shared Schema Component into the new XSD file, and include your Simple Content file.

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_FacilitySiteIdentity_v1.0.xsd"/>
<xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
```



## 10. Provide documentation describing the schema.

```

<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_FacilitySiteIdentity_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Customization of the SC_FacilitySiteIdentity_v1.0.xsd
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>

```

## 11. Perform a temporary extension of the Shared Schema Component Complex Type and add your new Data Element.

```

<xsd:complexType name="TempFacilitySiteIdentityDataType">
  <xsd:complexContent>
    <xsd:extension base="sc:FacilitySiteIdentityDataType">
      <xsd:sequence>
        <xsd:element ref="nj:FacilitySiteName" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

```

## 12. Perform a restriction of the Shared Schema Component Complex Type and remove the Data Element.

```

<xsd:complexType name="FacilitySiteIdentityDataType">
  <xsd:complexContent>
    <xsd:restriction base="nj:TempFacilitySiteIdentityDataType">
      <xsd:sequence>
        <xsd:element ref="sc:FacilitySiteIdentifier" minOccurs="0"/>
        <xsd:element ref="sc:FacilitySiteType" minOccurs="0"/>
        <xsd:element ref="sc:FederalFacilityIndicator" minOccurs="0"/>
        <xsd:element ref="nj:FacilitySiteName" minOccurs="0"/>
      </xsd:sequence>
    </xsd:restriction>
  </xsd:complexContent>
</xsd:complexType>

```

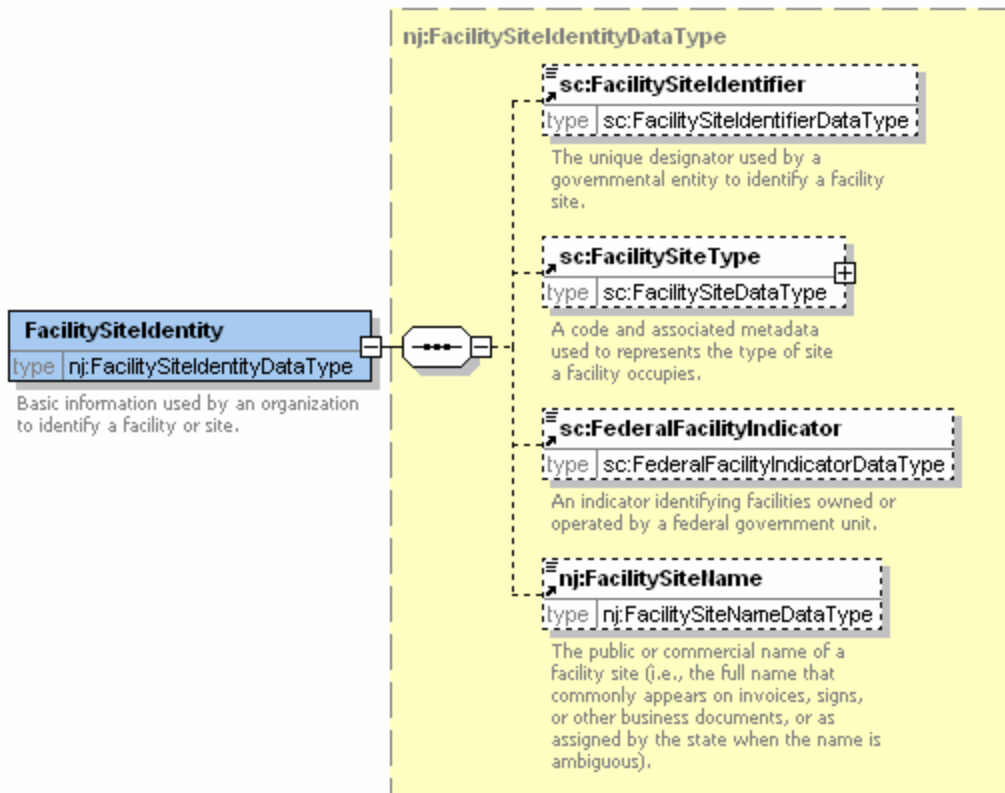
## 13. Create a Data Element whose type is FacilitySiteIdentityDataType.

```

<xsd:element name="FacilitySiteIdentity" type="nj:FacilitySiteIdentityDataType">
  <xsd:annotation>
    <xsd:documentation>Basic information used by an organization to identify a facility or site.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

```

Combining the sections above will result in the schema block shown below:



To view the XML Schema files used for this example, please refer to Sections 5.6 and 5.10.

### 4.3.7 Add an Enumeration List to a Data Element

In order to add an enumeration list to a Data Element contained in a Shared Schema Component, perform the following steps:

1. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SimpleContent\_SSCVersion.xsd”
  - b. If the file has already been created use the existing SimpleContent file
2. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

3. Import the Shared Schema Component SimpleContent File.

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_SimpleContent_v1.0.xsd"/>
```

4. Provide documentation describing the schema.

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_SimpleContent_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Simple Content file for New Jersey common simple types and data elements.
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

5. Create a SimpleType, based on the existing Shared Schema Component SimpleType, for the Data Element you wish to place a character length restrict on.

```
<xsd:simpleType name="ReportingFrequencyTextDataType">
  <xsd:restriction base="sc:ReportingFrequencyTextDataType">
    <xsd:enumeration value=""/>
    <xsd:enumeration value="MONTHLY"/>
    <xsd:enumeration value="QUARTERLY"/>
    <xsd:enumeration value="ANNUALLY"/>
  </xsd:restriction>
</xsd:simpleType>
```

6. Create a Data Element with the same name as the existing Data Element.

```
<xsd:element name="ReportingFrequencyText" type="nj:ReportingFrequencyTextDataType">
  <xsd:annotation>
    <xsd:documentation>The frequency with which the report is required to be submitted to the report
    recipient.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

7. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SSCBlockName\_SSCVersion.xsd”
8. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

9. Import the Shared Schema Component into the new XSD file, and include your Simple Content file.

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_ReportingCondition_v1.0.xsd"/>
<xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
```

10. Provide documentation describing the schema.

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_ReportingCondition_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Customization of the SC_ReportingCondition_v1.0.xsd
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

11. Perform a temporary extension of the Shared Schema Component Complex Type and add your new Data Element.

```
<xsd:complexType name="TempReportingConditionDataType">
  <xsd:complexContent>
    <xsd:extension base="sc:ReportingConditionDataType">
      <xsd:sequence>
        <xsd:element ref="nj:ReportingFrequencyText" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
```

12. Perform a restriction of the Shared Schema Component Complex Type and remove the Data Element.

```
<xsd:complexType name="ReportingConditionDataType">
  <xsd:complexContent>
    <xsd:restriction base="nj:TempReportingConditionDataType">
      <xsd:sequence>
        <xsd:element ref="sc:ReportType" minOccurs="0"/>
        <xsd:element ref="sc:ReportingPeriodStartDate" minOccurs="0"/>
        <xsd:element ref="sc:ReportingPeriodEndDate" minOccurs="0"/>
        <xsd:element ref="sc:FormIdentity" minOccurs="0"/>
        <xsd:element ref="nj:ReportingFrequencyText" minOccurs="0"/>
      </xsd:sequence>
    </xsd:restriction>
  </xsd:complexContent>
</xsd:complexType>
```

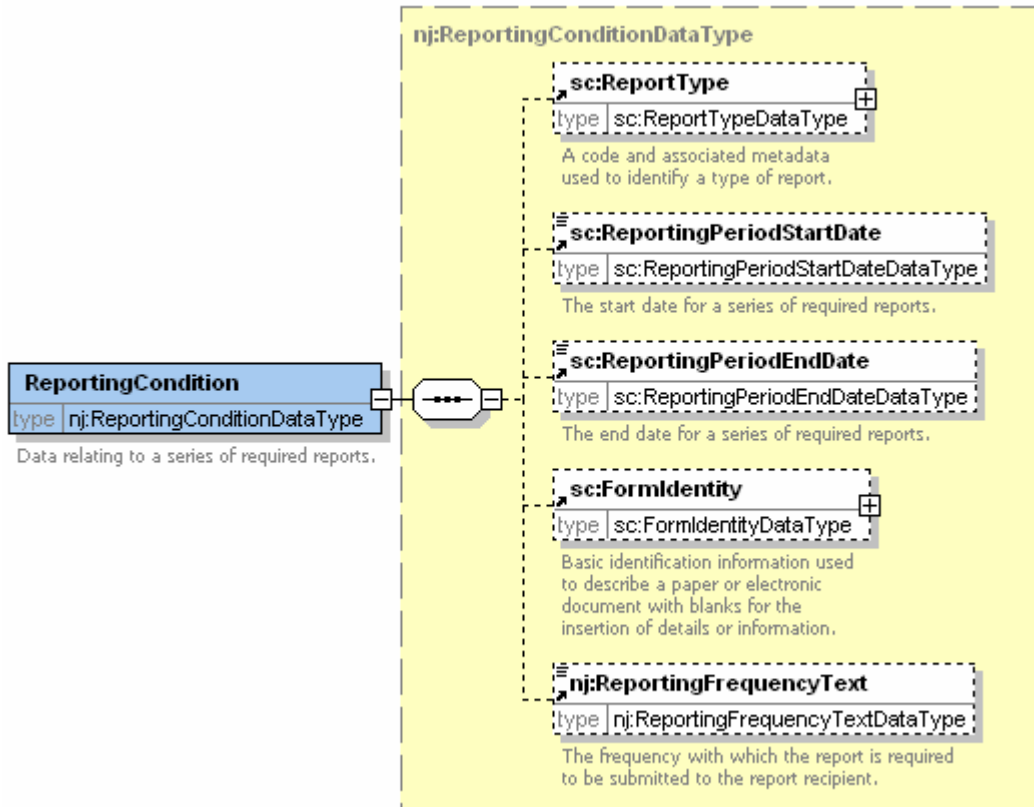
## 13. Create a Data Element whose type is ReportingConditionDataType.

```

<xsd:element name="ReportingCondition" type="nj:ReportingConditionDataType">
  <xsd:annotation>
    <xsd:documentation>Data relating to a series of required reports.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

```

Combining the sections above will result in the schema block shown below:



To view the XML Schema files used for this example, please refer to Sections 5.7 and 5.10.

### 4.3.8 Add a Pattern Restriction on a Data Element

In order to add a pattern restriction to a Data Element contained in a Shared Schema Component, perform the following steps:

1. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SimpleContent\_SSCVersion.xsd”
  - b. If the file has already been created use the existing SimpleContent file
2. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

3. Import the Shared Schema Component SimpleContent File.

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_SimpleContent_v1.0.xsd"/>
```

4. Provide documentation describing the schema.

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_SimpleContent_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Simple Content file for New Jersey common simple types and data elements.
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

5. Create a SimpleType, based on the existing Shared Schema Component SimpleType, for the Data Element you wish to place a character length restrict on.

```
<xsd:simpleType name="TelephoneNumberTextDataType">
  <xsd:restriction base="sc:TelephoneNumberTextDataType">
    <xsd:pattern value="\d(3)-\d(3)-\d(4)"/>
  </xsd:restriction>
</xsd:simpleType>
```

6. Create a Data Element with the same name as the existing Data Element.

```
<xsd:element name="TelephoneNumberText" type="nj:TelephoneNumberTextDataType">
  <xsd:annotation>
    <xsd:documentation>The number that identifies a particular telephone connection.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

7. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SSCBlockName\_SSCVersion.xsd”

8. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

9. Import the Shared Schema Component into the new XSD file, and include your Simple Content file.

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_Telephonic_v1.0.xsd"/>
<xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
```

10. Provide documentation describing the schema.

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_Telephonic_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Customization of the SC_Telephonic_v1.0.xsd
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

11. Perform a temporary extension of the Shared Schema Component Complex Type and add your new Data Element.

```
<xsd:complexType name="TempTelephonicDataType">
  <xsd:complexContent>
    <xsd:extension base="sc:TelephonicDataType">
      <xsd:sequence>
        <xsd:element ref="nj:TelephoneNumberText" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
```

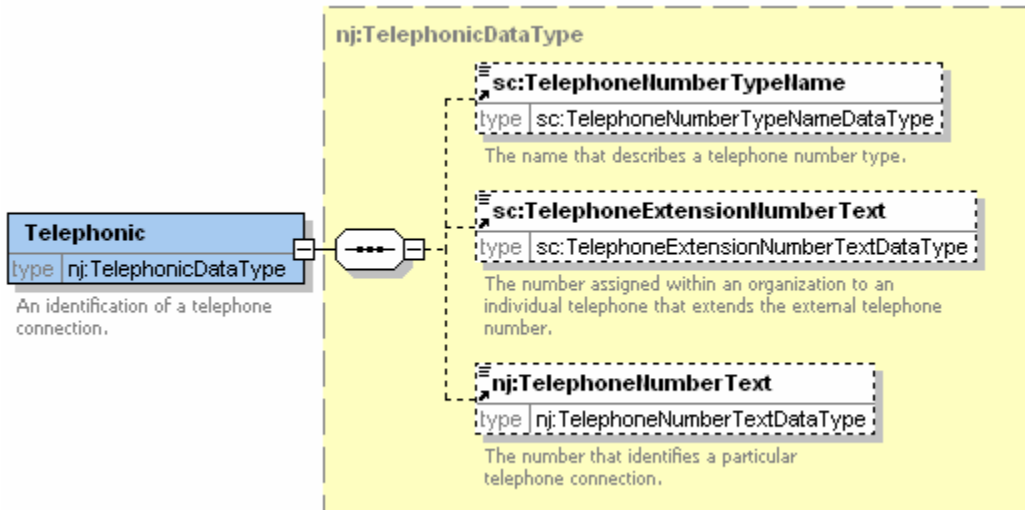
12. Perform a restriction of the Shared Schema Component Complex Type and remove the Data Element.

```
<xsd:complexType name="TelephonicDataType">
  <xsd:complexContent>
    <xsd:restriction base="nj:TempTelephonicDataType">
      <xsd:sequence>
        <xsd:element ref="sc:TelephoneNumberTypeName" minOccurs="0"/>
        <xsd:element ref="sc:TelephoneExtensionNumberText" minOccurs="0"/>
        <xsd:element ref="nj:TelephoneNumberText" minOccurs="0"/>
      </xsd:sequence>
    </xsd:restriction>
  </xsd:complexContent>
</xsd:complexType>
```

13. Create a Data Element whose type is TelephonicDataType.

```
<xsd:element name="Telephonic" type="nj:TelephonicDataType">
  <xsd:annotation>
    <xsd:documentation>An identification of a telephone connection.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

Combining the sections above will result in the schema block shown below:



To view the XML Schema files used for this example, please refer to Sections 5.8 and 5.10.



### 4.3.9 Change an Existing Enumeration List for a Data Element

In order to change an existing enumeration list of a Data Element contained in a Shared Schema Component, perform the following steps:

1. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SimpleContent\_SSCVersion.xsd”
  - b. If the file has already been created use the existing SimpleContent file
2. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
```

3. Import the Shared Schema Component SimpleContent File.

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_SimpleContent_v1.0.xsd"/>
```

4. Provide documentation describing the schema.

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_SimpleContent_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Simple Content file for New Jersey common simple types and data elements.
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

5. To add values to the enumeration list, create a new SimpleType with the additional values and then create a union of the existing Shared Schema Component SimpleType and the new SimpleType.

```
<xsd:simpleType name="TempElectronicAddressTypeNameDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="URL"/>
    <xsd:enumeration value="HTTPS"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="ElectronicAddressTypeNameDataType">
  <xsd:union memberTypes="sc:ElectronicAddressTypeNameDataType nj:ElectronicAddressTypeNameDataType">
  </xsd:union>
</xsd:simpleType>
```

6. Create a Data Element with the same name as the existing Data Element.

```
<xsd:element name="ElectronicAddressTypeName" type="nj:ElectronicAddressTypeNameDataType">
  <xsd:annotation>
    <xsd:documentation>The name that describes the electronic address type.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

7. Create a new .XSD file using the following file naming convention:
  - a. “YourNamespacePrefix\_SSCBlockName\_SSCVersion.xsd”

8. Set the targetNamespace to your namespace (please refer to XML AA in section 4.2).

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
  xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
  version="1.0">
```

9. Import the Shared Schema Component into the new XSD file, and include your Simple Content file.

```
<xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_ElectronicAddress_v1.0.xsd"/>
<xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
```

10. Provide documentation describing the schema.

```
<xsd:annotation>
  <xsd:documentation>
    Schema Name : NJ_ElectronicAddress_v1.0.xsd
    Schema Identification :
    Current Version Available At :
    Description : Customization of the SC_ElectronicAddress_v1.0.xsd
    Application : New Jersey
    Developed by : New Jersey
    Point of Contact :
  </xsd:documentation>
</xsd:annotation>
```

11. Perform a temporary extension of the Shared Schema Component Complex Type and add your new Data Element.

```
<xsd:complexType name="TempElectronicAddressDataType">
  <xsd:complexContent>
    <xsd:extension base="sc:ElectronicAddressDataType">
      <xsd:sequence>
        <xsd:element ref="nj:ElectronicAddressTypeName" minOccurs="0"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
```

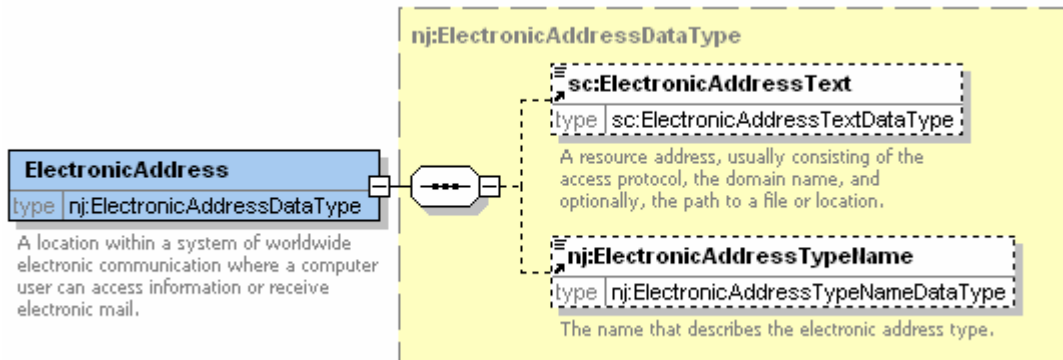
12. Perform a restriction of the Shared Schema Component Complex Type and remove the Data Element.

```
<xsd:complexType name="ElectronicAddressDataType">
  <xsd:complexContent>
    <xsd:restriction base="nj:TempElectronicAddressDataType">
      <xsd:sequence>
        <xsd:element ref="sc:ElectronicAddressText" minOccurs="0"/>
        <xsd:element ref="nj:ElectronicAddressTypeName" minOccurs="0"/>
      </xsd:sequence>
    </xsd:restriction>
  </xsd:complexContent>
</xsd:complexType>
```

13. Create a Data Element whose type is TelephonicDataType.

```
<xsd:element name="ElectronicAddress" type="nj:ElectronicAddressDataType">
  <xsd:annotation>
    <xsd:documentation>A location within a system of worldwide electronic communication where a computer user
      can access information or receive electronic mail.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
```

Combining the sections above will result in the schema block shown below:



To view the XML Schema files used for this example, please refer to Sections 5.9 and 5.10.

## 5 Appendix A: XML Schema files used in Customization Examples

The schema files provided in this section are used in the examples in Section 4 and are provided for reference.

### 5.1 NJ\_ContactPoint\_v1.0.xsd

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_Telephonic_v1.0.xsd"/>
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_ElectronicAddress_v1.0.xsd"/>
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_Affiliation_v1.0.xsd"/>
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_IndividualIdentity_v1.0.xsd"/>
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_MailingAddress_v1.0.xsd"/>
  <xsd:annotation>
    <xsd:documentation>
      Schema Name : NJ_ContactPoint_v1.0.xsd
      Schema Identification :
      Current Version Available At :
      Description : Schema used to transfer Individual contact information
      Application : New Jersey
      Developed by : New Jersey
      Point of Contact :
    </xsd:documentation>
  </xsd:annotation>
  <xsd:complexType name="ContactPointDataType">
    <xsd:sequence>
      <xsd:element ref="sc:IndividualIdentity"/>
      <xsd:element ref="sc:MailingAddress"/>
      <xsd:element ref="sc:Telephonic"/>
      <xsd:element ref="sc:ElectronicAddress"/>
      <xsd:element ref="sc:Affiliation"/>
    </xsd:sequence>
  </xsd:complexType>
  <xsd:element name="ContactPoint" type="nj:ContactPointDataType">
    <xsd:annotation>
      <xsd:documentation>Schema used to transfer individual contact information</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:schema>
```

## 5.2 NJ\_IndividualIdentity\_v1.0.xsd

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_IndividualIdentity_v1.0.xsd"/>
  <xsd:annotation>
    <xsd:documentation>
      Schema Name : NJ_IndividualIdentity_v1.0.xsd
      Schema Identification :
      Current Version Available At :
      Description : Customization of the SC_IndividualIdentity_v1.0.xsd
      Application : New Jersey
      Developed by : New Jersey
      Point of Contact :
    </xsd:documentation>
  </xsd:annotation>
  <xsd:complexType name="IndividualIdentityDataType">
    <xsd:complexContent>
      <xsd:restriction base="sc:IndividualIdentityDataType">
        <xsd:sequence>
          <xsd:element ref="sc:IndividualIdentifier"/>
          <xsd:element ref="sc:IndividualTitleText" minOccurs="0"/>
          <xsd:element ref="sc:NamePrefixText" minOccurs="0"/>
          <xsd:choice minOccurs="0">
            <xsd:element ref="sc:IndividualFullName" minOccurs="0"/>
            <xsd:sequence minOccurs="0">
              <xsd:element ref="sc:FirstName" minOccurs="0"/>
              <xsd:element ref="sc:MiddleName" minOccurs="0"/>
              <xsd:element ref="sc:LastName" minOccurs="0"/>
            </xsd:sequence>
          </xsd:choice>
          <xsd:element ref="sc:NameSuffixText" minOccurs="0"/>
        </xsd:sequence>
      </xsd:restriction>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:element name="IndividualIdentity" type="nj:IndividualIdentityDataType">
    <xsd:annotation>
      <xsd:documentation>The particular word(s) regularly connected with a person so that you can recognize, refer
to, or address him or her.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:schema>

```

### 5.3 NJ\_LaboratoryIdentity\_v1.0.xsd

```
<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_LaboratoryIdentity_v1.0.xsd"/>
  <xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
  <xsd:annotation>
    <xsd:documentation>
      Schema Name : NJ_LaboratoryIdentity_v1.0.xsd
      Schema Identification :
      Current Version Available At :
      Description : Customization of the SC_LaboratoryIdentity_v1.0.xsd
      Application : New Jersey
      Developed by : New Jersey
      Point of Contact :
    </xsd:documentation>
  </xsd:annotation>
  <xsd:complexType name="LaboratoryIdentityDataType">
    <xsd:complexContent>
      <xsd:extension base="sc:LaboratoryIdentityDataType">
        <xsd:sequence>
          <xsd:element ref="nj:LaboratoryName" minOccurs="0"/>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:element name="LaboratoryIdentity" type="nj:LaboratoryIdentityDataType">
    <xsd:annotation>
      <xsd:documentation>Basic identification information for an entity or person responsible for analysis of
substances.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:schema>
```

## 5.4 NJ\_Affiliation\_v1.0.xsd

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_Affiliation_v1.0.xsd"/>
  <xsd:annotation>
    <xsd:documentation>
      Schema Name : NJ_Affiliation_v1.0.xsd
      Schema Identification :
      Current Version Available At :
      Description : Customization of the SC_Affiliation_v1.0.xsd
      Application : New Jersey
      Developed by : New Jersey
      Point of Contact :
    </xsd:documentation>
  </xsd:annotation>
  <xsd:complexType name="AffiliationDataType">
    <xsd:complexContent>
      <xsd:restriction base="sc:AffiliationDataType">
        <xsd:sequence>
          <xsd:element ref="sc:AffiliationTypeText" minOccurs="0"/>
          <xsd:element ref="sc:AffiliationStartDate" minOccurs="0"/>
          <xsd:element ref="sc:AffiliationEndDate" minOccurs="0"/>
          <xsd:element ref="sc:AffiliationStatusText" minOccurs="0"/>
        </xsd:sequence>
      </xsd:restriction>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:element name="Affiliation" type="nj:AffiliationDataType">
    <xsd:annotation>
      <xsd:documentation>The particular word(s) regularly connected with a person so that you can recognize, refer
to, or address him or her.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:schema>

```

## 5.5 NJ\_FormIdentity\_v1.0.xsd

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_FormIdentity_v1.0.xsd"/>
  <xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
  <xsd:annotation>
    <xsd:documentation>
      Schema Name : NJ_FormIdentity_v1.0.xsd
      Schema Identification :
      Current Version Available At :
      Description : Customization of the SC_FormIdentity_v1.0.xsd
      Application : New Jersey
      Developed by : New Jersey
      Point of Contact :
    </xsd:documentation>
  </xsd:annotation>
  <xsd:complexType name="TempFormIdentityDataType">
    <xsd:complexContent>
      <xsd:extension base="sc:FormIdentityDataType">
        <xsd:sequence>
          <xsd:element ref="nj:FormEffectiveDate" minOccurs="0"/>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:complexType name="FormIdentityDataType">
    <xsd:complexContent>
      <xsd:restriction base="nj:TempFormIdentityDataType">
        <xsd:sequence>
          <xsd:element ref="sc:FormIdentifier" minOccurs="0"/>
          <xsd:element ref="sc:FormName" minOccurs="0"/>
          <xsd:element ref="sc:FormInstruction" minOccurs="0" maxOccurs="unbounded"/>
          <xsd:element ref="sc:FormCommentText" minOccurs="0"/>
          <xsd:element ref="nj:FormEffectiveDate" minOccurs="0"/>
        </xsd:sequence>
      </xsd:restriction>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:element name="FormIdentity" type="nj:FormIdentityDataType">
    <xsd:annotation>
      <xsd:documentation>Basic identification information used to describe a paper or electronic document with
      blanks for the insertion of details or information.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:schema>

```



## 5.6 NJ\_FacilitySiteIdentity\_v1.0.xsd

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_FacilitySiteIdentity_v1.0.xsd"/>
  <xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
  <xsd:annotation>
    <xsd:documentation>
      Schema Name : NJ_FacilitySiteIdentity_v1.0.xsd
      Schema Identification :
      Current Version Available At :
      Description : Customization of the SC_FacilitySiteIdentity_v1.0.xsd
      Application : New Jersey
      Developed by : New Jersey
      Point of Contact :
    </xsd:documentation>
  </xsd:annotation>
  <xsd:complexType name="TempFacilitySiteIdentityDataType">
    <xsd:complexContent>
      <xsd:extension base="sc:FacilitySiteIdentityDataType">
        <xsd:sequence>
          <xsd:element ref="nj:FacilitySiteName" minOccurs="0"/>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:complexType name="FacilitySiteIdentityDataType">
    <xsd:complexContent>
      <xsd:restriction base="nj:TempFacilitySiteIdentityDataType">
        <xsd:sequence>
          <xsd:element ref="sc:FacilitySiteIdentifier" minOccurs="0"/>
          <xsd:element ref="sc:FacilitySiteType" minOccurs="0"/>
          <xsd:element ref="sc:FederalFacilityIndicator" minOccurs="0"/>
          <xsd:element ref="nj:FacilitySiteName" minOccurs="0"/>
        </xsd:sequence>
      </xsd:restriction>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:element name="FacilitySiteIdentity" type="nj:FacilitySiteIdentityDataType">
    <xsd:annotation>
      <xsd:documentation>Basic information used by an organization to identify a facility or
site.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:schema>

```

## 5.7 NJ\_ReportingCondition\_v1.0.xsd

```

<?xml version="1.0" encoding="utf-8"?>
<!-- edited with XMLSPY v5 U (http://www.xmlspy.com) by enfoTech Consulting Inc. (enfoTech) -->
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_ReportingCondition_v1.0.xsd"/>
  <xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
  <xsd:annotation>
    <xsd:documentation>
      Schema Name : NJ_ReportingCondition_v1.0.xsd
      Schema Identification :
      Current Version Available At :
      Description : Customization of the SC_ReportingCondition_v1.0.xsd
      Application : New Jersey
      Developed by : New Jersey
      Point of Contact :
    </xsd:documentation>
  </xsd:annotation>
  <xsd:complexType name="TempReportingConditionDataType">
    <xsd:complexContent>
      <xsd:extension base="sc:ReportingConditionDataType">
        <xsd:sequence>
          <xsd:element ref="nj:ReportingFrequencyText" minOccurs="0"/>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:complexType name="ReportingConditionDataType">
    <xsd:complexContent>
      <xsd:restriction base="nj:TempReportingConditionDataType">
        <xsd:sequence>
          <xsd:element ref="sc:ReportType" minOccurs="0"/>
          <xsd:element ref="sc:ReportingPeriodStartDate" minOccurs="0"/>
          <xsd:element ref="sc:ReportingPeriodEndDate" minOccurs="0"/>
          <xsd:element ref="sc:FormIdentity" minOccurs="0"/>
          <xsd:element ref="nj:ReportingFrequencyText" minOccurs="0"/>
        </xsd:sequence>
      </xsd:restriction>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:element name="ReportingCondition" type="nj:ReportingConditionDataType">
    <xsd:annotation>
      <xsd:documentation>Data relating to a series of required reports.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:schema>

```

## 5.8 NJ\_Telephonic\_v1.0.xsd

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_Telephonic_v1.0.xsd"/>
  <xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
  <xsd:annotation>
    <xsd:documentation>
      Schema Name : NJ_Telephonic_v1.0.xsd
      Schema Identification :
      Current Version Available At :
      Description : Customization of the SC_Telephonic_v1.0.xsd
      Application : New Jersey
      Developed by : New Jersey
      Point of Contact :
    </xsd:documentation>
  </xsd:annotation>
  <xsd:complexType name="TempTelephonicDataType">
    <xsd:complexContent>
      <xsd:extension base="sc:TelephonicDataType">
        <xsd:sequence>
          <xsd:element ref="nj:TelephoneNumberText" minOccurs="0"/>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:complexType name="TelephonicDataType">
    <xsd:complexContent>
      <xsd:restriction base="nj:TempTelephonicDataType">
        <xsd:sequence>
          <xsd:element ref="sc:TelephoneNumberTypeName" minOccurs="0"/>
          <xsd:element ref="sc:TelephoneExtensionNumberText" minOccurs="0"/>
          <xsd:element ref="nj:TelephoneNumberText" minOccurs="0"/>
        </xsd:sequence>
      </xsd:restriction>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:element name="Telephonic" type="nj:TelephonicDataType">
    <xsd:annotation>
      <xsd:documentation>An identification of a telephone connection.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:schema>

```

## 5.9 NJ\_ElectronicAddress\_v1.0.xsd

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_ElectronicAddress_v1.0.xsd"/>
  <xsd:include schemaLocation="NJ_SimpleContent_v1.0.xsd"/>
  <xsd:annotation>
    <xsd:documentation>
      Schema Name : NJ_ElectronicAddress_v1.0.xsd
      Schema Identification :
      Current Version Available At :
      Description : Customization of the SC_ElectronicAddress_v1.0.xsd
      Application : New Jersey
      Developed by : New Jersey
      Point of Contact :
    </xsd:documentation>
  </xsd:annotation>
  <xsd:complexType name="TempElectronicAddressDataType">
    <xsd:complexContent>
      <xsd:extension base="sc:ElectronicAddressDataType">
        <xsd:sequence>
          <xsd:element ref="nj:ElectronicAddressTypeName" minOccurs="0"/>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:complexType name="ElectronicAddressDataType">
    <xsd:complexContent>
      <xsd:restriction base="nj:TempElectronicAddressDataType">
        <xsd:sequence>
          <xsd:element ref="sc:ElectronicAddressText" minOccurs="0"/>
          <xsd:element ref="nj:ElectronicAddressTypeName" minOccurs="0"/>
        </xsd:sequence>
      </xsd:restriction>
    </xsd:complexContent>
  </xsd:complexType>
  <xsd:element name="ElectronicAddress" type="nj:ElectronicAddressDataType">
    <xsd:annotation>
      <xsd:documentation>A location within a system of worldwide electronic communication where a computer user
can access information or receive electronic mail.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:schema>

```

## 5.10 NJ\_SimpleContent\_v1.0.xsd

```

<?xml version="1.0" encoding="utf-8"?>
<xsd:schema targetNamespace="urn:us:net:exchangenetwork:newjersey:1:0"
xmlns:nj="urn:us:net:exchangenetwork:newjersey:1:0" xmlns:sc="urn:us:net:exchangenetwork:sc:1:0"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified" attributeFormDefault="unqualified"
version="1.0">
  <xsd:import namespace="urn:us:net:exchangenetwork:sc:1:0" schemaLocation="SC_SimpleContent_v1.0.xsd"/>
  <xsd:annotation>
    <xsd:documentation>
      Schema Name : NJ_SimpleContent_v1.0.xsd
      Schema Identification :
      Current Version Available At :
      Description : Simple Content file for New Jersey common simple types and data elements.
      Application : New Jersey
      Developed by : New Jersey
      Point of Contact :
    </xsd:documentation>
  </xsd:annotation>
  <xsd:simpleType name="LaboratoryNameDataType">
    <xsd:restriction base="xsd:string"/>
  </xsd:simpleType>
  <xsd:element name="LaboratoryName" type="nj:LaboratoryNameDataType">
    <xsd:annotation>
      <xsd:documentation> The name used by the laboratory for conducting business</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:simpleType name="FormEffectiveDateDataType">
    <xsd:restriction base="xsd:date"/>
  </xsd:simpleType>
  <xsd:element name="FormEffectiveDate" type="nj:FormEffectiveDateDataType">
    <xsd:annotation>
      <xsd:documentation> The date when the reporting form became effective.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:simpleType name="FacilitySiteNameDataType">
    <xsd:restriction base="sc:FacilitySiteNameDataType">
      <xsd:maxLength value="255"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:element name="FacilitySiteName" type="nj:FacilitySiteNameDataType">
    <xsd:annotation>
      <xsd:documentation>The public or commercial name of a facility site (i.e., the full name that commonly
      appears on invoices, signs, or other business documents, or as assigned by the state when the name is
      ambiguous).</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:simpleType name="ReportingFrequencyTextDataType">
    <xsd:restriction base="sc:ReportingFrequencyTextDataType">
      <xsd:enumeration value=""/>
      <xsd:enumeration value="MONTHLY"/>
      <xsd:enumeration value="QUARTERLY"/>
      <xsd:enumeration value="ANNUALLY"/>
    </xsd:restriction>
  </xsd:simpleType>
  <xsd:element name="ReportingFrequencyText" type="nj:ReportingFrequencyTextDataType">
    <xsd:annotation>
      <xsd:documentation>The frequency with which the report is required to be submitted to the report
      recipient.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>

```

```
<xsd:simpleType name="TelephoneNumberTextDataType">
  <xsd:restriction base="sc:TelephoneNumberTextDataType">
    <xsd:pattern value="\d(3)-\d(3)-\d(4)"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:element name="TelephoneNumberText" type="nj:TelephoneNumberTextDataType">
  <xsd:annotation>
    <xsd:documentation>The number that identifies a particular telephone connection.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:simpleType name="TempElectronicAddressTypeNameDataType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="URL"/>
    <xsd:enumeration value="HTTPS"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="ElectronicAddressTypeNameDataType">
  <xsd:union memberTypes="sc:ElectronicAddressTypeNameDataType
nj:ElectronicAddressTypeNameDataType"/>
</xsd:simpleType>
<xsd:element name="ElectronicAddressTypeName" type="nj:ElectronicAddressTypeNameDataType">
  <xsd:annotation>
    <xsd:documentation>The name that describes the electronic address type.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
</xsd:schema>
```