



National Center for
State Courts

NIEM Wayfarer Documentation

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Wayfarer User Documentation

Introduction

NIEM Wayfarer is a tool for exploring the National Information Exchange Model (NIEM). The size and intricacies of this model make it difficult to understand. NIEM Wayfarer exists to help people understand how the various pieces of the model interrelate. This User Documentation gives an overview of the features of NIEM Wayfarer.

Searching

Searching is the main entry point into Wayfarer. A user typically begins by typing likely terms into the search box and looking at the resulting hits.

The search results page presents elements, types, and code table entries that match the search terms entered. Results can be narrowed or broadened by changing the searching options, detailed below. The results page shows matching elements in the left-hand column, matching types in the middle column, and matching code table entries in the right-hand column.

Note that the code table entry results are hits within the code table items, not to the code table as a whole. So, searching for "blue" will return items such as a particular eye color rather than a code table called "blue."

With most browsers, hovering the mouse pointer will result in a pop-up containing the definition of the element or type.

Searching Options

Searches can be narrowed or broadened by changing the searching options. The default is to search both names and definitions. The full range of options is described below.

Both Names and Definitions

This option searches both names and definitions for matches. It provides a good balance between getting too many results and getting too few.

Names, Definitions, and More

This option includes additional search fields. These fields include:

- Keywords (synonyms for NIEM terms)
- Example Content
- Additional Usage Information

Including these fields may yield too many results to be useful. On the other hand, it is the only way to search on "police officer" and have `j:EnforcementOfficial` be returned as a result.

Names Only

This option searches element and type names only. This is best used when searching on a common term that will appear in many definitions.

Definitions Only

This option searches element and type definitions. It is used primarily to filter out names containing common terms.

Exact Name Match

This option searches for an exact match with an element or type name. (Namespace prefixes are ignored.) Use this option to quickly zero in on a particular element. For example, searching on “person” will result in dozens of hits. To quickly get to nc:Person or nc:PersonType, do an exact name search on “person”.

Contextual Searching

Contextual searching takes element inheritance into account. The classic example is an Arrest. The j:Arrest object is of j:ArrestType. j:ArrestType is derived from nc:ActivityType. Things of nc:ActivityType can contain an nc:ActivityDateRepresentation. So, j:ArrestType can, through inheritance, contain an nc:ActivityDateRepresentation.

However, there is no element called “ArrestDateRepresentation.” Rather, that concept is represented by the nc:ActivityDateRepresentation in the context of a j:Arrest object.

A normal search for “arrest date” will not provide that information. But a contextual search will. The link to do a contextual search is at the end of every search result.

View Elements

Each element in the NIEM has a page providing details about it. Each page begins with some general information about the element, namely:

- The element name.
- The definition of the element.
- Keywords, example content, and additional usage information, where available.
- Information about the namespace in which the element resides.

If this element was reached by clicking on it as a sub-element in a previous element’s page, NIEM Wayfarer will list this as the Path to the element. This is a convenience for cutting and pasting element location path information into a mapping spreadsheet.

Containers

The upper-left table on the element page shows what other sorts of types can contain this element. Each subsequently higher containing type is shown, until a “root-level” type is reached. Clicking on any of these types, or on the example elements listed with each, will take the user to the page for that type or element.

Multiple Direct Containers

In some cases, an element can be directly contained within more than one type. In these instances, each containing type is shown, with horizontal lines separating each type.

Sub-Properties

The upper-right table on the element page shows which sub-elements can be contained by the element in question. These sub-elements are normally displayed in alphabetical order. They can optionally be displayed in schema order via a link at the top of the table. Clicking on an element will take the user to the page for that element.

Substitution Groups

The NIEM contains a number of Substitution Groups. A Substitution Group consists of a Group Head, and a number of Group Members. In an XML instance document, the Group Head is replaced by one of the Group Members. For example, the

nc:Activity element contains a Group Head called nc:ActivityDateRepresentation. This Group Head must be replaced by a Group Member, in this case either an nc:ActivityDate or an nc:ActivityDateRange. On the page for nc:Activity, NIEM Wayfarer will show the Group Members, with a note saying which Group Head they are replacing.

References

Some elements in the NIEM are references that point to other elements, rather than containing other elements. For references, NIEM Wayfarer notes that the reference points to something else. For RoleOf references, NIEM Wayfarer will also display the proper type to which the reference should point.

All Sub-Properties

The lower-left table on the element page shows all the sub-elements that the element in question can contain. This includes elements that are contained via inheritance. These sub-elements are grouped by the type from which they are inherited.

All Containers

The lower-right table on the element page shows all types that can ultimately contain the element in question. This list includes elements that contain the element in question via inheritance.

Graphical View

Each element can be displayed in a graphical format as well. (Technically, it's the element's type that is displayed.) The diagram is based on UML, with added coloring and notation to make the relationships clearer for those not used to UML. The element's type sits in the center of the diagram, as the header of a box. Inside the box are sub-elements that are contained by the type and are themselves of a simple data type. To the right are other sub-elements that are contained by the type, but are themselves complex objects. A dashed line surrounds all these boxes, indicating that they, as a group, make up things of this type.

Above the type are the types from which it is derived and to the left are other types derived from the type in question.

A legend sits at the very top of the diagram.

Clicking on any element or type name will display the appropriate diagram. Clicking on the "Text Display" link in the upper-right of the diagram will return the user to the normal NIEM Wayfarer pages.

This graphical view is rendered using SVG, an XML-based language for describing diagrams. It requires an SVG-enabled browser. Firefox has SVG capabilities built-in. Internet Explorer requires a free plug-in. The URL for the plug-in is listed on any pages that link to the graphical diagrams.

Comparison Matrix

In some cases, there may be an element that exists in more than one namespace. An example is PersonSSNIdentification, which exists both in NIEM-Core and in Intelligence. The comparison matrix displays the properties for these elements side-by-side, for comparison purposes.

Earlier releases of the NIEM contained many such instances. NIEM 2.0 has eliminated nearly all of them. Those that remain are arguably mistakes. This functionality remains in Wayfarer, but the ambiguity it existed to solve is no longer a large problem.

View Types

Each type in the NIEM has a page providing details about it. Each page begins with some general information about the type, namely:

- The type name.

- The definition of the type.
- Keywords, example content, and additional usage information, where available.
- Information about the namespace in which the type resides.

Type Derivation

The upper-right table on the type page shows the types from which the type in question is derived. This derivation is traced up as far as possible, generally ending in either a simple data type or `s:ComplexObjectType`.

Types Derived From

The upper-left table on the type page shows types that are derived from the type in question.

Elements of Type

The lower-right table on the type page shows elements that are defined as being of the type in question.

Types Ultimately Derived From

The lower-left table on the type page shows elements that are of a type ultimately derived from the type in question. Includes any type derived from the type in question, as well as any types derived from a type derived from the type in question. The derivation tree is traversed as deeply as needed. Taking `nc:PersonType` as an example, this list would include elements of `nc:PersonType`, but also elements of `scr:ChildType`. In essence, this is a list of elements that are some sort of Person. A broader example is `nc:ActivityType`. The resulting list is every element in the NIEM that is some sort of activity.

View Code Tables

Some types in the NIEM represent tables of codes and definitions. Any type that represents a code table will have the actual values of the table listed at the end of the page.

Be aware that some code tables contain thousands of codes. These tables may take longer to display than other NIEM Wayfarer pages.

Graphical View

The Type Graphical View is identical to the Element Graphical View. Please refer to that section for additional information.

Comparison Matrix

The Type Comparison Matrix is identical to the Element Comparison Matrix. Please refer to that section for additional information.