

NIEM Conformance Guidelines

Introduction

The National Information Exchange Model (NIEM) is the result of a collaborative effort led by the justice, homeland security, national defense, and health and human services communities to produce a set of common, well-defined data elements to be used for data exchange development and harmonization.

NIEM is a *reference model*. This means it is not a rigid standard that must be used exactly as it is in its entirety. NIEM is designed as a core set of building blocks that can be used as a consistent baseline for creating exchange documents and transactions across all levels of government and industry. While a full XML Schema rendering of the entire model is released annually with the latest updates, it is *not* a requirement for conformance that this entire set of schemas be used for exchange validation. Nonetheless, there *are* several conformance requirements.

The goal of NIEM conformance is for the sender and receiver of information to share a common, unambiguous understanding of the meaning of that information. Conformance to NIEM ensures that a basic core set of information (the NIEM components) is well understood by the community and carries the same meaning. The result is some level of interoperability that would be unachievable with the proliferation of custom schemas and dictionaries.

These conformance rules serve as guidelines for any agency utilizing NIEM to implement their information sharing exchanges. Grantees that are developing inter-agency XML-based exchanges may need to comply with special condition language contained in the grant and follow the associated NIEM conformance guidelines outlined below.

Conformance Rules

A full explanation of NIEM conformance is available in the NIEM Conformance Specification at <https://niem.github.io/NIEM-Conformance-Spec/>, but those rules can be generalized as follows:

1. Although NIEM subset schemas may be used in practice, instances must still be able to validate against the full NIEM reference schemas. Subsets cannot be modified in any way that would cause them to conflict with the authoritative NIEM release schemas. To reuse NIEM properties and types in a conformant manner, IEPD extension schemas must import and reference the applicable NIEM namespaces either as full reference schemas from a release or as valid subset schemas. Extension schemas must also follow the NIEM Naming and Design Rules (NDR) to ensure consistent schema development.
2. If the appropriate component (type, element, or attribute) required for the application exists in NIEM, use that component (i.e., do not create a duplicate of one that already exists).
3. Be semantically consistent. Use NIEM components in accordance with their definitions. Do not use a NIEM element to represent data other than what its definition describes.
4. Apply XML Schema extension rules from the NDR correctly and consistently when making new components to represent concepts not already in NIEM.
5. Follow the IEPD (Information Exchange Package Documentation) Lifecycle as described in NIEM documentation, and define all required artifacts at each step.

Assistance in Developing NIEM-Conformant Schemas

Further guidance on the proper development of conformant exchange schemas is provided via the NIEM TechHub site at <https://niem.github.io>. NIEM documentation is almost exclusively kept and maintained online.

In addition to documentary support, tools are also provided to help simplify conformance when developing exchanges. The Tool Catalog at <https://www.niem.gov/tools-catalog> provides links to most major tools, but two specific tools are targeted at helping with conformance:

- The NIEM [Schema Subset Generation Tool](#) (SSGT) helps users build conformant NIEM XML schema subsets for IEPDs.
- The NIEM [Conformance Testing Assistant](#) (ConTesA) is built to check schemas for conformance. While it can't find *every* issue with a schema, it can identify many common mistakes.

The NIEM IEPD Lifecycle and other best practice models for developing exchanges take full advantage of these tools to ensure consistent design and development.

Additional Remarks About Conformance

Information exchanges conform to NIEM; systems do not. The way data is labeled or used internally in a system does not impact NIEM conformance. Conformance relies upon how data is packaged as XML for an information exchange.

Use of some components of NIEM to exchange information with other agencies does not in itself guarantee conformance to NIEM. Users should be careful to avoid violating conformance Rule 2, listed above. An information exchange either conforms to NIEM or it does not.

Grant Recipient Schema Registration Requirements

To support government-wide information sharing, many recipients of grants for projects implementing information exchange capabilities using XML technology are required to use NIEM. Grantees may further be required to register and make available without restriction all schemas and artifacts generated as a result of the grant to the component registry.

At the present time, schemas can be registered in the **National Information Sharing Standards (NISS) Information Exchange Package Documentation (IEPD) and Justice Standards Clearinghouse** located at <https://www.it.ojp.gov/niss>. While the Clearinghouse is an older registry, newer registries and repositories for NIEM exchanges are currently under development for both publicly available IEPDs and for restricted ones, the latter scheduled to be available by end of 2021.

Other organizations not directly required to use NIEM are nonetheless encouraged to register their IEPDs in order to facilitate interoperability of information systems and enhance sharing of critical information.