

Using IC-ISM With NIEM

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Purpose

This document describes requirements and actions needed to reenable use of IC-ISM with NIEM now and in the future.

Until recently, the schema for the Intelligence Community Information Security Marking (IC-ISM) standard was considered for official use only (FOUO) and could not be published. Therefore, NIEM 2.0 could not integrate components of IC-ISM without publishing the IC-ISM schema. This document describes actions to restore the ability to use IC-ISM within NIEM 2.0 and future releases.

Background

The IC-ISM standard is an XML Schema described in the IC-ISM Data Element Dictionary and the Implementation Guide. It is one of the Intelligence Community (IC) Metadata Standards for Information Assurance and is the preferred way to apply information security markings within XML instances. Until recently, the Director of National Intelligence (DNI) considered the current version of the IC-ISM schema (Version 2, *IC-ISM-V2.xsd*, dated April 30, 2004) to be labeled FOUO. Therefore, the schema could not be published. Recent correspondence with DNI has confirmed that the schema and associated stylesheets are no longer FOUO, although the Data Element Dictionary and the Implementation Guide do remain FOUO.

NIEM 1.0 contains both IC-ISM attributes (copied into a local namespace) as well as earlier security elements (from the Global Justice XML Data Model (GJXDM)). However, the older GJXDM security elements were removed from NIEM 2.0 because they duplicated IC-ISM attributes. The FOUO status of the IC-ISM schema was discovered at the same time NIEM 2.0 was being released. To ensure validation of NIEM 2.0, IC-ISM could not be integrated into NIEM 2.0 without publishing *IC-ISM-v2.xsd*. The removal of FOUO status now enables NIEM to incorporate the IC-ISM attributes more easily. However, since NIEM 2.0 has already been released, complete integration of IC-ISM into NIEM will have to wait until a future release.

NIEM 1.0 (includes copies of IC-ISM attributes)

NIEM 1.0 includes a copy of the IC-ISM attributes in its own local namespace; therefore, no action is required to enable users to employ IC-ISM within NIEM 1.0.

NIEM 2.0 (immediate use of IC-ISM)

NIEM 2.0 has no built-in components for security marking of data. However, the metadata mechanism in NIEM 2.0 provides a method for using IC-ISM attributes

immediately by defining them in a metadata container with an *s:id* attribute. An element in an instance that must use IC-ISM metadata simply links to the appropriate metadata container element (with *IDREF* and *ID* type attributes *s:metadata* and *s:id*, respectively).

Note that this method is only an interim solution designed to allow users to use IC-ISM within NIEM 2.0 immediately. This is neither the preferred nor the proposed method for the future. The intelligence community would prefer that ISM metadata be defined as attributes contained within the element being described. However, this is not possible without updating NIEM 2.0 and the NIEM NDR (to be described in the next section).

To use IC-ISM consistently, users should insert both the NIEM *icism-metadata.xsd* schema and *IC-ISM-V2.xsd* (both attached to this document) into the following schema locations within the NIEM 2.0 reference set or subset they are using:

```
niem/icism/2.0/icism-metadata.xsd
niem/icism/2.0/IC-ISM-V2.xsd
```

NIEM 2.1 and future releases (improved use of IC-ISM)

To facilitate the preferred use of the IC-ISM standard in NIEM will require, in sequence:

1. Completion of the NIEM versioning architecture.
2. A forward compatible release update to NIEM 2.0.
3. Minor change(s) to the NIEM NDR.
4. Governance Committee review and approval.

An outline of the proposed longer-term solution is as follows:

1. Add all IC-ISM attributes in the *SecurityAttributesOptionGroup* (within *IC-ISM-V2.xsd*) directly to all NIEM high-level object types that might need information security markings. These properties will be inherited as inherent attributes to all subsequently derived types. Therefore, this will employ the intelligence community's best practice for using the IC-ISM attributes. Further, since this addition is a purely nondestructive change, forward compatibility with NIEM 2.0 will be preserved; i.e., instances built for NIEM 2.0 will also validate with this release.
2. Change the NDR to account for the importing of an additional namespace that is not NIEM conforming but that will not affect instance conformance validation. Since the IC-ISM attributes will be added as defined in IC-ISM directly to NIEM, there will be no impact to NIEM instances.
3. The new IC-ISM components will automatically become visible and usable in the NIEM tool set when the updates to NIEM described in Item 1 above are implemented and published in an official release.