

## Rapid XML/JSON/NIEM/Open Data Development



### Overview

In the context of Big Data, Open Data and information exchanges and analysis, first you have to specify and create your content and its formal structure.

#### CAM

- The CAM toolkit has been developed as an open source initiative with support from the developer community, OASIS, DHS and now Oracle Corporation.

The CAM editor is the leading open source toolkit for building and deploying information exchanges and Open Data APIs using XML or JSON with SQL. The CAM toolkit provides an intuitive approach using a WYSIWYG visual structure editor to dramatically simplify the process of developing and managing XML business information exchanges and schema, including the use of JSON. This gives developers control, insights and analysis that are needed for consistent, interoperable and reliable exchanges.

#### NIEM

- The NIEM approach to information exchange has matured over the past several years and is now identified as a strategic asset for use across government, both within the USA and then also with international partners.

The CAM toolkit also automates the tasks of generating supporting artifacts such as business documentation, cross-reference spreadsheets, models (UML, XMI), XML Schema, JAXB data bindings and test XML instances generation including SQL data extracts.

### Functional Capabilities

Domain dictionaries of information exchange components are at the heart of reusable and consistent software solutions and the open source CAM toolkit. The CAM editor provides simple visual drag and drop from configurable dictionary component collections into any new or existing information exchange structure. This transforms the process from complex, time-intensive schema editing by specialized XML developers into something that can be done by business application knowledge workers.

#### Open Data

- Civic entities and industry service providers are enabling the next generation of internet solutions and applications using Open Data. Engineering these with a collaborative shared view is important.

### Open Source Initiative

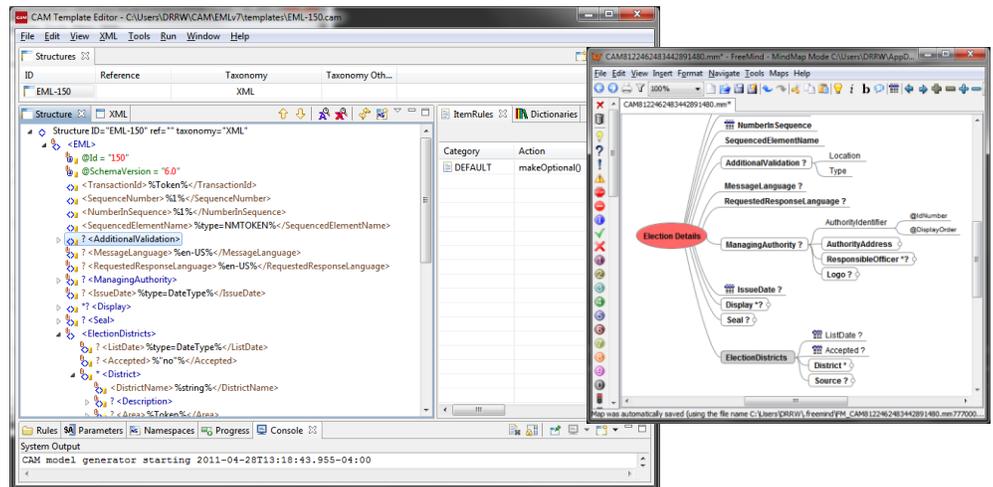
CAM is a community open source project that implements the open public [CAM specification from OASIS](#). The CAM editor toolkit kit provides new and innovative capabilities that underpin complete life cycle support for information exchange development. The toolkit consists of three components; the visual editor, the CAMV validation engine and the Open-XDX open data engine. This combination empowers software developers to deliver solutions in record time with improved quality, consistency and reliability.



Involving business stakeholders and information architects in the modeling process during the design phase of the NIEM approach is crucial to the design of successful implementations. The CAM toolkit provides visual modeling interfaces so that developers can share information exchange structures with knowledge workers as modeling diagrams. Model generation supports both commercial UML modeling tools via XMI file export and mind mapping tools such as the open source Freemind tool via XML export.

### Resources

- Download the latest CAM editor at the project site on sourceforge - [sourceforge.net/projects/camprocessor](http://sourceforge.net/projects/camprocessor)
- Additional tutorials and learning materials are available from – <http://www.youtube.com/user/thecameditor>
- Online Demonstrations site [www.VerifyXML.org](http://www.VerifyXML.org)



### NIEM

The scope and breadth of NIEM (National Information Exchange Model) approach today provides its own unique challenges for solution implementers looking to leverage NIEM to rapidly develop optimized exchange patterns within their business applications. The NIEM approach is also serving the public sector community as a standard framework for data exchange and now also internationally as well. NIEM includes over twelve domain areas and associated dictionaries with more being anticipated as additional government agencies adopt the approach. Determining what existing NIEM components match the context of a particular information exchange is increasingly challenging along with contributing quality new reusable components as NIEM use expands.

### Enterprise Dictionaries

Enterprise dictionary generation is a new capability introduced into the NIEM approach in 2011 but for which previously there has been only proprietary solution support. The CAM editor can produce dictionary components by harvesting a variety of existing enterprise assets, schemas and spreadsheets. The resulting dictionaries are in standard XML layouts that combine use of OASIS and UN/CEFACT standard dictionary definition technical specifications. These XML dictionaries can be easily added as collections into the drag and drop visual editor included in the CAM editor.

Underlying these capabilities is the existing robust CAM functionality developed for NIEM over the past three years with DHS assistance. This includes evaluation of structures against the NIEM naming and design rules to flag common errors, spellchecking and interoperability blockers; generation of new XSD schema sets, example XML instance generation, business rule documentation, a testing and validation engine; spreadsheet cross reference generation and NIEM reuse statistics analysis.

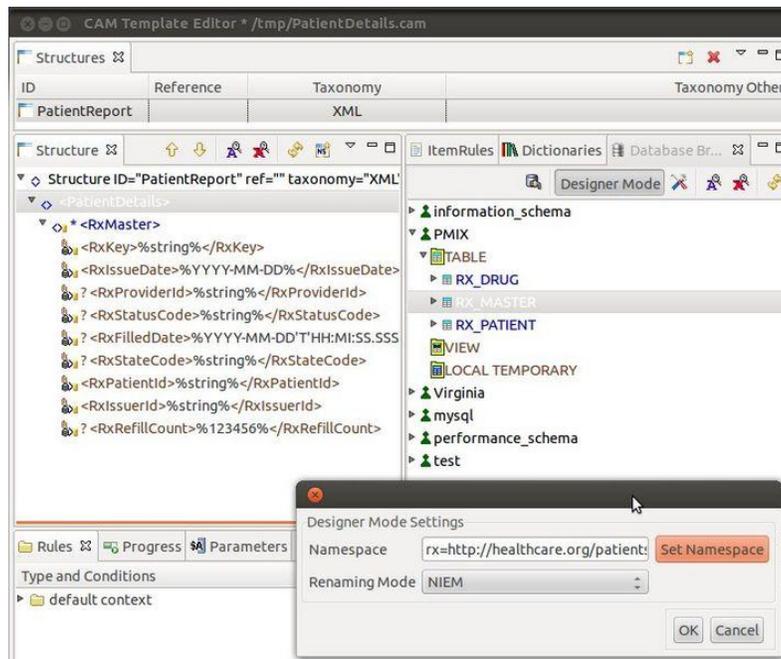
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## JSON Support

Starting with the CAM v3.0 release there are now a host of features for using JSON with the CAM editor. There is a JSON template type and wizard to allow creating templates from JSON. Then the CAMV validation engine now supports JSON input and handling and validation. The Open-XDX tools also combine with StAXON Java tools for JSON to allow generating JSON content for Open Data APIs. We have a [quick video demonstration](#) for using JSON with the CAM editor.

## End to end lifecycle development support



The CAM editor toolkit puts together a complete set of XML, JSON and SQL capabilities designed for developing information exchanges and Open Data APIs simpler, quicker, more consistent and predictable for implementers. Semantic alignment is supported through the use of dictionaries of components and the ability to align to naming conventions such as the NIEM NDR (Naming and Design Rules).

The standards based open source code base and resources empower the developer community to extend and expand the toolset in creative ways in the future.

## CONTACT US

For more information see the <http://www.cameditor.org> resources site