# Implementation Help

## xsi:schemaLocation

xsi:schemaLocation has been mandated and standardized for consistency per USPTO XML Design Rules and Conventions Standard document.

Sample XML documents provided in “Samples” folder can be validated successfully by altering xsi:schemaLocation with appropriate relative (../../../../) path based on your runtime path.

Final vendor generated XML instance xsi:schemaLocation MUST have following format:

<XSD namespace> <business area>/“V”<major version number>“\_”<minor version number>“/Schema/”<XSD business area>”/Document/”<Document component name>“\_”“V”<major version number>“\_”<minor version number>“.xsd”

Approved business area(s):

* Patent
* Trademark
* Legal
* Design
* Corporate
* Dissemination

For example:

Patent Claims

OA2XML – xsi:schemaLocation=”urn:us:gov:doc:uspto:patent Patent/V5\_0/Schema/USPatent/Document/ClaimsDocument\_V5\_0.xsd”

CDC/eCommerce – xsi:schemaLocation=”urn:us:gov:doc:uspto:patent Patent/V7\_0/Schema/USPatent/Document/ClaimsDocument\_V7\_0.xsd”

Abstract/Specification

CDC/eCommerce – xsi:schemaLocation=”urn:us:gov:doc:uspto:patent Patent/V7\_0/Schema/USPatent/Document/SpecificationDocument\_V7\_0.xsd”

Legacy example:

PATI Conversion – xsi:schemaLocation=”urn:us:gov:doc:uspto:patent Schema/ClaimsDocument\_1\_2.xsd”

Vastec Vendor Patent schemas V1\_3 – xsi:schemaLocation=” urn:us:gov:doc:uspto:patent XMLSchema/V1\_3/IncomingDocument\_1\_0.xsd”

Sample Document – xsi:schemaLocation=”urn:us:gov:doc:uspto:patent ../../../XMLSchema/Patent/V1\_3/SpecificationDocument\_1\_0.xsd”

CGI Vendor Patent schemas V1\_3 – xsi:schemaLocation=”urn:us:gov:doc:uspto:patent XMLSchema/V1\_3/IncomingDocument\_1\_0.xsd”

## JAXB issues

**Problem**: Unable to transform XSDs to Java classes in JAXB/xjc compiler

**Background**: Due the complex nature and element and attribute naming used in MathML schemas that are part of ST.96 standard client class generation in JAXB transformation causes runtime errors.

**Solution**: Please use MathML3\_Bindings.xjb file located in Resources folder to resolve this issue.

## XML Document validation issues

### Generic SAX Parser interface level configurations

Defines a factory API that enables applications to configure and obtain a SAX based parser to parse XML documents. Also sets the particular feature in the underlying implementation of org.xml.sax.XMLReader. A list of the core features and properties can be found at <http://www.saxproject.org/>.

### Saxon

To resolve validation issues for Saxon based implementations enable following features and see additional features based on your version. Some of these features may not be applied to your version of Saxon, please check your implementation help page for additional details.

#### Set following properties to SAXParserFactory

* Enable validation feature for
  + Schema
  + Schema-full-checking
* Enable namespace feature

**Example in Java**:

SAXParserFactory factory = SAXParserFactory.newInstance();

/\*\*

Note: Following two features checks the Schema grammar itself for additional errors that are time-consuming or memory intensive. It does not affect the level of checking performed on document instances that use Schema grammars.

\*/

factory.setFeature("http://apache.org/xml/features/validation/schema", true);

factory.setFeature("http://apache.org/xml/features/validation/schema-full-checking", true);

/\*\*

Note: If the validation feature is set to true, then the document must contain a grammar that supports the use of namespaces.

\*/

factory.setFeature("http://xml.org/sax/features/namespaces", true);

#### Set following property to SchemaFactory

* Enable honour-all-schemaLocations feature

**Example in Java:**

/\*\*  
Note: All schema location hints will be used to locate the components for a given target namespace

\*/

SchemaFactory schemaFactory = SchemaFactory.newInstance("http://www.w3.org/2001/XMLSchema");

schemaFactory.setFeature("http://apache.org/xml/features/honour-all-schemaLocations", true);

### Xerces

To resolve validation issues for Xerces based implementations enable following features and see additional features based on your version. Some of these features may not be applied to your version of Xerces, please check your implementation help page for additional details.

#### Set following properties to DocumentBuilderFactory

* Enable validation feature for
  + Schema
  + Schema-full-checking
* Enable namespace feature
* Enable honour-all-schemaLocations feature

**Example in Java**:

DocumentBuilderFactory builderFactory = DocumentBuilderFactory.newInstance();

/\*\*

Note: Following two features checks the Schema grammar itself for additional errors that are time-consuming or memory intensive. It does not affect the level of checking performed on document instances that use Schema grammars.

\*/

builderFactory.setFeature("http://apache.org/xml/features/validation/schema", true);

builderFactory.setFeature("http://apache.org/xml/features/validation/schema-full-checking", true);

/\*\*

Note: If the validation feature is set to true, then the document must contain a grammar that supports the use of namespaces.

\*/

builderFactory.setFeature("http://xml.org/sax/features/namespaces", true);

/\*\*  
Note: All schema location hints will be used to locate the components for a given target namespace

\*/

builderFactory.setFeature("http://apache.org/xml/features/honour-all-schemaLocations", true);

#### Set following property to SchemaFactory

* Enable honour-all-schemaLocations feature

**Example in Java**:

/\*\*  
Note: All schema location hints will be used to locate the components for a given target namespace

\*/

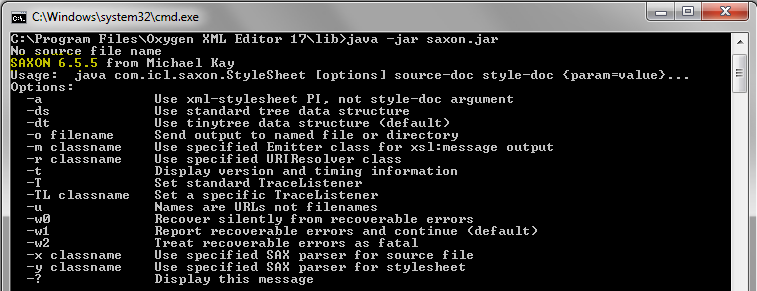
SchemaFactory schemaFactory = SchemaFactory.newInstance("http://www.w3.org/2001/XMLSchema");

schemaFactory.setFeature("http://apache.org/xml/features/honour-all-schemaLocations", true);

**Example in Oxygen XML Editor:**

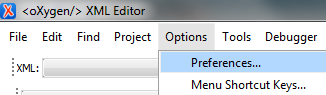
***Note: Since each Saxon version varies in supported XSD validation features, please check your version of Saxon documentation for supported validation features. We tested using Saxon 6.5.5 version bundled with Oxygen XML Editor 17.1.***

Oxygen XML Editor Installation location and bundled Saxon.jar version information:



Setting option in editor:

1. Go to Options 🡪 Preferences



1. Select XML 🡪 XML Parser 🡪XML Schema node from left navigation and select all available options under “Saxon EE validation features” or Xerces feature if you are using Xerces.

