

Interactive Data Public Test Suite

Version 13-090917 DRAFT

1 Goals

The purpose of the public test suite is to assist developers of software that must validate Interactive Data prior to its submission to EDGAR. The test suite consists of many small Interactive Data instances, schemas and linkbases that are categorized as to whether they violate a validation check, and if so, what validation check they violate and whether that would result in a warning, or in an error that would cause the Interactive Data to be rejected.

Filers that attach Interactive Data to EDGAR submissions as EX-101.* attachments are responsible for compliance with all validations in Chapter 6 of Volume II of the EDGAR Filer Manual (“the Manual”). Automated validation by preparation software can make it more efficient for filers to verify compliance before sending their filings to EDGAR itself. Nothing in this test suite is intended to create new requirements or change existing requirements for EDGAR submissions; filers should consult the Commission rules and the Manual for submission requirements.

The organization of the test suite follows that of Chapter 6 of the Manual. Chapter 6 consists of subsections that each detail one or more Interactive Data validations, and these individual subsections are grouped into sections according to type of attachment (instance, schema, or linkbase) and whether the validations can be completely automated (called “syntax” sections) or whether they deal with the relationships that may require some manual review or accounting judgment (called “semantic” sections).

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2 Notation

In this document, path names use forward slashes, although the tests work on any operating system.

3 Versions

The major version number "13" refers to a specific version of Manual (draft or otherwise) and the minor version number "090917" is the date of the minor version, formatted as YYMMDD.

4 Installation

The suite is distributed as a zip format archive. Extract the entire contents to any convenient location, preserving folder paths. It contains a top level folder that corresponds to the version of the Manual.

All files are encoded as 8-Bit Universal Transmission Format (UTF-8) or US ASCII. The suffix ".xsd" indicates an XML Schema file, ".xsl" indicates an XML Style Sheet (XSL) and suffix ".xml" indicates any other XML file type.

There are no executables in the zip format archive except for one XSL 1.0 file in subfolder "lib".

5 Library

The folder "lib" contains an XML Document Type Definition (DTD) and three XML Entity Declaration (ENT) files used to validate the un-escaped content of Text Blocks and XBRL Footnotes.

A Text Block is an XML element whose type is "textBlockItemType" in a namespace starting with "http://xbrl.us/us-gaap/".

An XBRL Footnote is an XML element named "footnote" in namespace "http://www.xbrl.org/2003/linkbase".

Files test.xsd and test.xsl are used to validate and view *-testcase.xml files in a browser, respectively.

6 Test Cases

A testcase file is an XML file used by software developers. The file names sets of files to be processed together and the expected results of that processing. The testcase XML file is typically transformed to produce a shell command script; the resulting command script invokes a validator on one file in each variation and stores the result

of that validation. When a validator produces results identical to those expected, it is said to be “conforming”.

All testcases and their test files are in the “conf” folder. The testcases are grouped by section with a simple sort code scheme that corresponds to the number and title of the section, for example:

- Section 6.4 = Folder 604-filing-semantics
- Section 6.5 = Folder 605-instance-syntax

Within each section folder are subsection folders, following a similar coding scheme, for example:

- Section 6.5.1 = 605-instance-syntax/605-01-identifier-scheme
- Section 6.19.1 = 619-reference-semantics/619-01/619-01-no-standard-references

Within each subsection is one testcase file whose name is prefixed the same as the folder. For example:

- 605-instance-syntax/605-01-identifier-scheme/603-09-identifier-scheme-test case.xml

The numbering of Manual sections is stable. The number and meaning of subsections will not change except to add additional subsections, or to mark subsections as “deleted” “no longer in force” or equivalent language.

The syntax of the testcase is a modification of the syntax typically used by the XBRL International consortium (<http://xbrl.org>) and so it retains some features that are not meaningful for this test suite. The schema at lib/test.xsd is for validating the syntax of each testcase.

Each testcase file is XML that meant to be used for programming test harnesses and similar applications. Each testcase file also has an XML Processing Instruction referring to an XSL 1.0 style sheet lib/test.xsl for viewing it as HTML in a browser.

6.1 Required elements <creator>, <name> and <email>

These elements name the party responsible for the testcase, which for this test suite is always the Office of Interactive Disclosure (OID) at the SEC.

6.2 Required element <number>

By convention this is the sort code pattern “6[0-9]{2}-[0-9]{2}”, the sort code for a section as described above. “605-22” means section 6.5.22.

6.3 Required element <name>

The schema restricts this to contain a specific string that provides a human-readable reference back to the Manual:

- EDGAR Filer Manual v{version} 6.{section}.{subsection} page 6-{page}

6.4 Required element <description>

This element has the plain text of the corresponding section of the Manual (usually the entire heading and body, but not tables), but only for reference; the Manual is normative.

This element also sometimes contains parenthetical additions such as (REMARK ...) that indicates some implementation detail or related commentary, or a (TODO ...) that indicates a known coverage gap or other deficiency in a draft version.

6.5 Optional repeating element <reference>

There can be any number of reference elements but each must have attribute @specification containing any useful string.

As of version 13-090917 there are no <reference> elements in the test suite.

7 The <variation> element

Each test case contains one or more variations. Each variation exposes just one aspect of the validation to be performed: either a “no good” variation that is meant to trigger exactly one validation error, or sometimes a “good” variation that is meant to illustrate either the base case or an edge case.

7.1 Required attribute @id of <variation>

By convention, this is in the format “_[0-9]{3}((gd)|(ng))” in which “gd” always indicates a good (valid) variation and “ng” indicates a no good (invalid or triggering a warning) variation.

Concatenating the character “e”, the testcase number, and the portion of the @id occurring after the underscore, results in the base name of the files unique to that variation. For example, if the test number is 604-05 and there is a variation named “_003gd” then there will be data files with base name e60405003gd.

The three digit number [0-9]{3} is often a zero based sequence, but may have gaps or some other iteration pattern.

The numbering and meaning of individual variations within a testcase may change from release to release, although this is expected to be rare.

7.2 Required element <name> of <variation>

This contains free form plain text although by convention it begins with the section number and ends with either the token GOOD or NOGOOD. For example, these are the names of variations in 605-01-entity-identifier-scheme:

- 6.5.1, Scheme in instance is <http://www.sec.gov/CIK>, GOOD
- 6.5.1, Scheme in instance is <http://www.sec.gov>, NOGOOD

7.3 Required element <description> of <variation>

This contains free form plain text; again by convention it often duplicates the name element contents without the numeric prefix, and is always brief.

7.4 Optional repeating element <reference> of <variation>

There can be any number of reference elements but each must have attribute @specification containing any useful string.

As of version 13-090917 there are no <reference> elements in the test suite.

7.5 Required element <data> of <variation>

The data element groups the files in the variation. This has exactly one instance followed by zero or more linkbases, followed by one or more schemas. Although in principle the set of local files in the Discoverable Taxonomy Set (DTS) of the instance is discoverable from the instance, the testcase files also serve as a kind of manifest to ensure a set of files is complete without extraneous content.

The DTS is described in detail along with other XBRL constructs in the XBRL 2.1 Specification at:

<http://xbrl.org/Specification/XBRL-RECOMMENDATION-2003-12-31+Corrected-Errata-2008-07-02.htm>

7.5.1 Optional repeating element <parameter> of <data>

Sometimes, validation requires an external input. For example, EDGAR uses the Central Index Key (CIK) number to identify filers.

For example, variations in testcase 605-02-entity-identifier-match-cik requires that the CIK of the submission be provided as a parameter to the validation of an instance.

7.5.2 Required attribute @name of <parameter>

A QName that is the name of the parameter. In this test suite the QName content must have the empty namespace.

7.5.3 Required attribute @datatype of <parameter>

A QName that is the datatype of the parameter, usually xs:string.

7.5.4 Required attribute @value <parameter>

A string that is cast to the datatype specified and passed to the validator.

7.5.5 Parameter names, types and values currently in use

Only "submissionType", "cikList", and "cikNameList" are currently used. If <parameter> is not specified, a validator being tested can use the following default values, or skip validation rules that require unspecified parameters:

| @name | @datatype | default @value appearing in test instances |
|----------------|-----------|--|
| submissionType | xs:string | 8-K |
| cikList | xs:string | 9876543210 |
| cikNameList | xs:string | Variation basename, e.g. "e60512000gd". |

Testcase e60524 uses parallel lists of CIK and entity names. The delimiter for cikList is the comma character "," and the delimiter for cikNameList is the seven character sequence "|Edgar|". Thus the following elements declare that the first CIK has company name "ABC & DEF LLC" and the second has company name "THIS\$TR@NGE N#ME=; ;."

```
<conf:parameter xmlns:conf="http://xbrl.org/2008/conformance" xmlns=""
  name="cikList" datatype="xs:string"
  value="9876543210,3333333333"/>
<conf:parameter xmlns:conf="http://xbrl.org/2008/conformance" xmlns=""
  name="cikNameList" datatype="xs:string"
  value="ABC & DEF LLC|Edgar|THIS$TR@NGE N#ME=; ;."/>
```

7.6 Required element <instance>

The local file name of the instance must be an EDGAR compliant file name (less than 24 characters, etc). By convention the name is formatted as:

```
e6{section}{section}[0-9]{3}((gd)|(ng))-200(8|9)1231.xml
```

For example e60501001ng-20081231.xml refers to a no good instance violating Manual section 6.5.1.

By convention, instances that have the date part 20081231 use the 1.0 DEI taxonomy and those with date part 20091231 use the 2009 DEI taxonomy.

The attribute @readMeFirst must be "true". This attribute indicates to a test script that it is the instance file that is first opened by the validator being tested.

7.7 Optional repeating element <linkbase>

Every variation has linkbases named using the same naming convention as the instance.

Many testcase variations have a set of common linkbases named edgar-20081231_*. * or edgar-20091231_*. *. Identically named "edgar-" linkbase files differ from folder to folder.

7.8 Required repeating element <schema>

Every variation has at least one schema with its own set of linkbases named using the same naming convention as the instance.

Usually a variation has exactly one schema. Rarely, in section 608-schema-syntax or elsewhere, the nature of the testcase may necessitate more than one schema.

Many testcase variations have a set of common schemas named edgar-20081231.xsd or edgar-20091231.xsd. Identically named "edgar-" schema files differ from folder to folder.

7.9 Required element <result>

For a no good variation the result element contains at least one <assert> element. The element is otherwise empty.

7.10 Optional repeating element <assert>

The assert element contains information used to group information about the error or warning message expected upon validation.

8 The <assert> element

The assert element declares the severity, associated EFM section and mnemonic error code to be generated. The element allows any other attributes to appear that the author of the variation may deem useful¹.

¹ The syntax of <assert> is syntactically convertible to that used by the XBRL International Formula 1.0 Specification (<http://www.xbrl.org/SpecRecommendations/>).

8.1 Required attribute @severity of <assert>

There are two values, the most common one being "err" and the other "wrn" meaning a warning. In the EDGAR system, a warning does not cause the XBRL files to be stripped from a submission; an error does.

8.2 Required attribute @num of <assert>

The syntax is the same as the <number> element content without the dash. It is not identical because in rare cases the @num may differ from the testcase file where it appears, as for example when one error could not occur without triggering another.

8.3 Required attribute @name of <assert>

A mnemonic code with dash-separated proper case tokens such as "No-Presentation-Order". Tokens are strictly proper case, for example, "No-Xml-Base-Allowed" even for the error concerning attribute "xml:base", or "Illegal-Html" for errors concerning HTML.

8.4 Optional attribute @frd of <assert>

A two-letter code for a related group of assertions; this appears in error codes as reported by EDGAR, such as "60515-cp-No-Xml-Base-Allowed".

8.5 Optional attribute @countSatisfied of <assert>

Defaulting to 0, this indicates the number of satisfied assertions in the variation.

8.6 Optional attribute @countNotSatisfied of <assert>

Defaulting to 1, this indicates the number of assertion violations in the variation.

9 Notes on the folder structure and file details

There are a few exceptions to the mapping from Manual subsections to the test suite.

At this time, there is incomplete coverage of these syntax sections of the Manual:

- 603-filing-syntax (some subsections require information such as the attachment type (EX-100, EX-101) that is not available from the content of the XBRL files themselves).
- There are no separate tests for 605-06, 605-18, 605-26, 607-02, 607-05, 607-06, 609-02, 609-08, 610-07, or 612-04 because these sections do not have their own unique error codes.

Two files in folder 603-04-no-html-character-entities are not valid XML; this is intentional (e60304001ng-20081231.xml, e60304002ng-20081231_lab.xml).

There is no coverage of these semantic sections because they do not at this time result in EDGAR warning or error messages:

- 606-instance-semantics
- 608-schema-semantics
- 611-label-semantics
- 613-presentation-semantics

- 615-calculation-semantic
- 617-definition-semantic
- 619-reference-semantic

There are no such subsections 6.22.1, 6.22.2 and 6.22.3 in the Manual; these correspond, respectively, to the three issues covered by section 6.22 and the current contents of the <http://www.sec.gov/info/edgar/edgartaxonomies.xml> file.

10 Notes on 6.16 Definition Syntax Subsections

Subsections 6.16.4, 6.16.6, 6.16.7, and 6.16.8 can be difficult to interpret without further technical explanation. Their test cases are illustrated and explained in the figure below.

EDGAR Filer Manual Chapter 16, sections 4, 5, 7 and 8

| | Section text | X Disallowed → Required | Remarks |
|--------|---|--|--|
| 6.16.4 | 6.16.4 The xlink:arcrole attribute 'http://xbrl.org/int/dim/arcrole/domain-member' must have no undirected cycles in any Directed Relationship Set as defined in XBRL Dimensions 1.0. | | This is called "no tangled domains". It is forbidden in all DRS. But it does not specify where the DRS begins. It does not even imply that the DRS begins with an element that is the source of a DomMbr arc. Because of primary item inheritance, the unioning of dimension-domain relationships, and unions of hypercubes, this only rules out the very simplest structures. |
| 6.16.5 | 6.16.5 The DTS of an instance must contain in each base set, for each source element, at most one effective relationship with an xlink:arcrole attribute equal to 'http://xbrl.org/int/dim/arcrole/all'. | | This was intended to prevent unioning of hypercubes so as to simplify other constraints. Because of primary item inheritance, this rule only rules out the simplest violations. |
| 6.16.7 | 6.16.7 An axis of a negative table must appear in a positive table in a definitionLink having an equal value of xlink:role. An Axis cannot appear as an Axis of a negative hypercube (that is, axis excluded from a table) unless there are members of that Axis in a positive table. Formally, an axis element that is the target of an effective relationship with arcrole equal to 'http://xbrl.org/int/dim/arcrole/hypercube-dimension' that is consecutive from a relationship with arcrole 'http://xbrl.org/int/dim/arcrole/notAll' must also be the target of an effective relationship in a link:definitionLink having the same value of xlink:role and which itself is consecutive from an effective relationship with xlink:arcrole attribute equal to 'http://xbrl.org/int/dim/arcrole/all'. | <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> LEGEND DimDom = dimension-domain DomMbr = domain-member HcDim = hypercube-dimension R1,R2,R3 = Role →R2 = Targetrole is R2 HC1 = Hypercube element P1,P2 = Primary element </div> | This rule is intended to ensure that the notAll arc does not forbid members of a dimension that is not even relevant to a hypercube. DomMbr relationships between P1 and P2 are not relevant, since neither all nor notAll are ever consecutive from DomMbr. Note that the rule assumes, but does not require, that the target roles on HcDim1 and HcDim2 are different, so that the members of Dim1 are different in HC1 and HC2. |
| 6.16.8 | 6.16.8 The target of an effective relationship with an xlink:arcrole attribute equal to 'http://xbrl.org/int/dim/arcrole/notAll' must not be the target of an effective arc with an xlink:arcrole attribute equal to 'http://xbrl.org/int/dim/arcrole/all' in link:definitionLink elements having equal values of xlink:role. This rule ensures that a Table (hypercube) is not both positive and negative. | | This rule complements 6.16.7 by ensuring that HC1 and HC2 are distinct. The combination of this constraint, 6.16.4, and XBRL Dimensions 1.0 constraint's prohibition of undirected cycles in HcDim relationships prevents using @targetRole to give the same HC element different members of the same axis. |

11 Contacts

Developers with questions, bug reports, or suggestions for additional variations to improve coverage should send email to Ask-OID@sec.gov as indicated in the owner element. The SEC cannot guarantee a response to every communication. Before sending a bug report, check for the latest version and check the Interactive Data FAQ (<http://www.sec.gov/spotlight/xbrl/staff-interps.shtml>).

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