XBRL GL

Taxonomy Framework Technical Architecture 2025

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1 Requirements/Motivation

The XBRL GL taxonomy framework has been designed to support all the constructs that were provided by the XBRL 2.1 [XBRL].

XBRL GL requires a highly tuple based taxonomy architecture. In version 2.1 the XML Schema [SCHEMA-1] content modelling mechanism is employed for the content model of tuples. This creates a new challenge when it comes to extensibility of a tuple's content model since such extensibility is not well supported in XML Schema and thus an architecture that permits this is necessary.

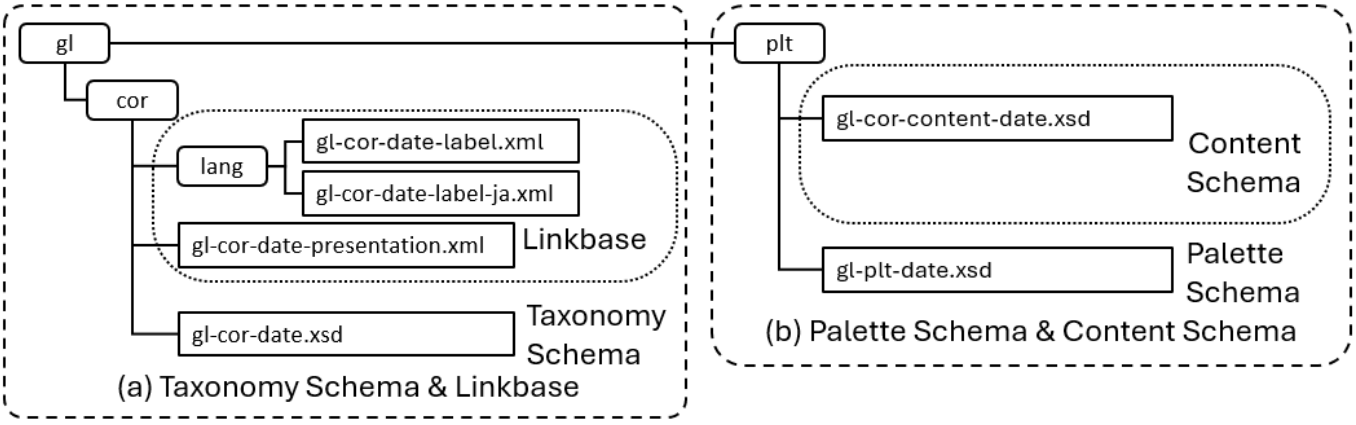
The GL Taxonomy Framework Technical Architecture (GLTFTA) 1.0 was proposed as a recommendation on 2006-10-25 (https://www.xbrl.org/int/gl/2006-10-25/gltfta-pr-2006-10-25.htm) and as a Recommendation on 2007-04-17 (https://www.xbrl.org/INT/gl/2007-04-17/gltfta-rec-2007-04-17.htm). The current recommendation is dated 2015-03-25 (https://www.xbrl.org/int/gl/2015-03-25/GLTFTA-REC-2015-03-25.html). The release history of the XBRL GL Taxonomy Framework Technical Architecture can be found at https://specifications.xbrl.org/release-history-xbrl-gl-2015-xbrl-gltfta.html.

Unfortunately, current GLTFTA does not fully explain how to extend the GL taxonomy. This document is intended to provide a more precise guide on how to extend it.

2 The structure of the GL Taxonomy Framework

2.1 COR Module and Its Palette

Firstly, let's examine the detailed definition of the COR module and palette, using the COR module alone. This structure forms the foundation for extension. The key design issue is understanding why the palette is defined separately. The reason is explained below. This explanation is not clearly provided in the current GLTFTA. The following figure shows the directory and file structure of the GL Palette taxonomy, using only the COR module.



Although the current GLTFTA requires selecting a predefined set of combinations of modules, such as case-c, case-c-b, etc., the taxonomy developers can define the required extension module, select the necessary modules and make their own selection of module sets, adding extension modules together. In this case, the contents of the selected modules may change, allowing for the removal, modification, or addition of tuples or items in the developing taxonomy.

The reason for separating (a) Taxonomy Schema & Linkbase and (b) Palette Schema & Content Schema is to support modular extension, similar to how an artist creates a picture by using a palette with the necessary colour tubes and blending colours on it.

2.2 Palette Schema & Content Schema

2.2.1 Palette Shema

gl-plt-2015-03-25.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
      targetNamespace="http://www.xbrl.org/int/gl/plt/2015-03-25"
      attributeFormDefault="unqualified" elementFormDefault="qualified"
      xmlns:xs="http://www.w3.org/2001/XMLSchema"
      xmlns:xlink="http://www.w3.org/1999/xlink"
      xmlns:link="http://www.xbrl.org/2003/linkbase">
  <annotation>
    <appinfo>
      <link:linkbaseRef xlink:type="simple"
        xlink:href="../../cor/lang/gl-cor-2015-03-25-label.xml"
        xlink:title="Label Links, all"
        xlink:role="http://www.xbrl.org/2003/role/labelLinkbaseRef"
        xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"/> <!—COR Label Linkbase -->
    </appinfo>
  </annotation>
  <import namespace="http://www.xbrl.org/int/gl/cor/2015-03-25"
    schemaLocation="gl-cor-content-2015-03-25.xsd"/> <!—COR Content Schema -->
</schema>
```

The Palette Schema specifies the use of the COR Content Schema, which acts as a palette for blending colours from selected modules. The taxonomy developers can select the required Label Linkbase to provide localised labels for the element's name and definition.

2.2.2 COR Content Schema

2.2.3 Content Schema for COR Module

gl-cor-content-2015-03-25.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<schema
    ...
  targetNamespace="http://www.xbrl.org/int/gl/cor/2015-03-25">
    ...
  <include schemaLocation="../../cor/gl-cor-2015-03-25.xsd"/> <!—Include COR Taxonomy Schema -->
    ...
  <complexType name="entryHeaderComplexType">
    <complexContent>
      <restriction base="anyType">
        <sequence>
            ...
          <element ref="gl-cor:entryType" minOccurs="0" maxOccurs="1"/>
```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```
          <element ref="gl-cor:entryNumber" minOccurs="0" maxOccurs="1"/>
          <element ref="gl-cor:entryComment" minOccurs="0" maxOccurs="1"/>
            ...
          <element ref="gl-cor:entryDetail" minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
        <attribute name="id" type="ID"/>
      </restriction>
    </complexContent>
  </complexType>
    ...
  <complexType name="entryDetailComplexType">
    <complexContent>
      <restriction base="anyType">
        <sequence>
          <element ref="gl-cor:lineNumber" minOccurs="0" maxOccurs="1"/>
          <element ref="gl-cor:account" minOccurs="0" maxOccurs="unbounded"/>
            ...
        </sequence>
        <attribute name="id" type="ID"/>
      </restriction>
    </complexContent>
  </complexType>
    ...
  <complexType name="lineNumberItemType">
    <simpleContent>
      <restriction base="xbrli:stringItemType">
      </restriction>
    </simpleContent>
  </complexType>
    ...
  <complexType name="accountComplexType">
    <complexContent>
      <restriction base="anyType">
        <sequence>
          <element ref="gl-cor:accountMainID" minOccurs="0" maxOccurs="1"/>
            ...
        </sequence>
        <attribute name="id" type="ID"/>
      </restriction>
    </complexContent>
  </complexType>
</schema>
```

The COR Content Schema, which acts as a palette, specifies tuple content selection and item data type definitions. The COR Taxonomy Schema is included within the Content Schema. The reason for separating element definitions and their data type definitions is that keeping the Linkbase definition with the Taxonomy Schema means the Linkbase does not require redefinition when the Content Schema is revised. The Linkbase relies on the element ID attributes defined in the Taxonomy Schema, and defining elements in the Content Schema would require redefining the Linkbase to refer to the Palette Schema. This separation ensures that the Linkbase does not need to be redefined.

If taxonomy developers modify tuple contents, they are required to modify the Linkbase in their extension module as well.

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2.3 Taxonomy Schema & Linkbase

2.3.1 Taxonomy Schema for COR Module

gl-cor-2015-03-25.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<schema
  ...
  targetNamespace="http://www.xbrl.org/int/gl/cor/2015-03-25"
  xmlns:gl-cor="http://www.xbrl.org/int/gl/cor/2015-03-25"
  xmlns:gl-gen="http://www.xbrl.org/int/gl/gen/2015-03-25">
  <annotation>
    <appinfo>
      <xbrll:linkbaseRef xlink:type="simple"
      xlink:href="gl-cor-2015-03-25-presentation.xml"
      xlink:title="Presentation Links, all"
      xlink:role="http://www.xbrl.org/2003/role/presentationLinkbaseRef"
      xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"/>
    </appinfo>
  </annotation>
  <import namespace="http://www.xbrl.org/int/gl/gen/2015-03-25" schemaLocation="../gen/gl-gen-2015-03-
25.xsd"/>
  ...
  <element name="entryHeader" id="gl-cor_entryHeader" type="gl-cor:entryHeaderComplexType"
    substitutionGroup="xbrli:tuple" nillable="true"/>
  ...
  <element name="entryDetail" id="gl-cor_entryDetail" type="gl-cor:entryDetailComplexType"
    substitutionGroup="xbrli:tuple" nillable="true"/>
  <element name="lineNumber" id="gl-cor_lineNumber" type="gl-cor:lineNumberItemType"
    substitutionGroup="xbrli:item" nillable="true" xbrli:periodType="instant"/>
  <element name="account" id="gl-cor_account" type="gl-cor:accountComplexType"
    substitutionGroup="xbrli:tuple" nillable="true"/>
  ...
</schema>
```

The COR Taxonomy Schema defines elements as either a tuple or an item using the substitutionGroup attribute and specifies their name, ID, and type. The Content Schema file, as explained earlier, defines the data type using complexType for both tuples and items. By separating the element definition from the data type definition, this deferred type definition allows taxonomy designers to freely structure the required tuple contents within the palette, even when using the same tuple, such as entryHeader or entryDetail.

For example, entryHeader specifies its datatype as gl-cor:entryHeaderComplexType, and this schema file has the "gl-cor" namespace. However, this datatype is not defined within the schema, resulting in an error when checking this schema file alone. Once included in a content schema file, this definition is satisfied.

```
   <element name="entryHeader" id="gl-cor_entryHeader" type="gl-
cor:entryHeaderComplexType"
      substitutionGroup="xbrli:tuple" nillable="true"/>
```

2.3.2 COR Presentation Linkbase

gl-cor-2015-03-25-presentation.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<linkbase xmlns="http://www.xbrl.org/2003/linkbase"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
```

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```
  xsi:schemaLocation="http://www.xbrl.org/2003/linkbase http://www.xbrl.org/2003/xbrl-linkbase-2003-12-31.xsd">
  <presentationLink xlink:type="extended" xlink:role="http://www.xbrl.org/2003/role/link">
    <loc xlink:type="locator" xlink:href="gl-cor-2015-03-25.xsd#gl-cor_accountingEntries"
      xlink:label="gl-cor_accountingEntries"
      xlink:title="presentation: accountingEntries to documentInfo"/>
    <loc xlink:type="locator" xlink:href="gl-cor-2015-03-25.xsd#gl-cor_documentInfo"
      xlink:label="gl-cor_documentInfo"
      xlink:title="presentation: accountingEntries to documentInfo"/>
    <presentationArc xlink:type="arc" xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
      xlink:from="gl-cor_accountingEntries" xlink:to="gl-cor_documentInfo"
      xlink:title="presentation: accountingEntries to documentInfo" use="optional" order="10.0"/>
    ...
  </presentationLink>
</linkbase>
```

The Presentation Linkbase locator <loc> specifies its referencing element with the xlink:href attribute. The specified value, "gl-cor-2015-03-25.xsd#gl-cor_accountingEntries," consists of the schema file's relative location and the referenced element's id attribute, using the "schema file location#referenced element's id" notation.

In this example, "gl-cor_accountingEntries" is defined in the COR Taxonomy Schema file gl-cor-2015-03-25.xsd under the same directory as follows:

```
<element name="accountingEntries" id="gl-cor_accountingEntries"
   type="gl-cor:accountingEntriesComplexType"
   substitutionGroup="xbrli:tuple" nillable="false"/>
```

<presentationArc> defines an arc between "gl-cor_accountingEntries" and "gl-cor_documentInfo" using the <loc> element's xlink:label attributes.

```
    <presentationArc xlink:type="arc" xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
      xlink:from="gl-cor_accountingEntries" xlink:to="gl-cor_documentInfo"
      xlink:title="presentation: accountingEntries to documentInfo" use="optional" order="10.0"/>
```

2.3.3 COR Label Linkbase

gl-cor-2015-03-25-label.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<linkbase xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.xbrl.org/2003/linkbase http://www.xbrl.org/2003/xbrl-linkbase-2003-12-31.xsd"
  xmlns="http://www.xbrl.org/2003/linkbase"
  xmlns:xlink="http://www.w3.org/1999/xlink">
  <labelLink xlink:type="extended" xlink:role="http://www.xbrl.org/2003/role/link">
    <loc xlink:type="locator"
      xlink:href="../gl-cor-2015-03-25.xsd#gl-cor_accountingEntries" xlink:label="accountingEntries"/>
    <label xlink:type="resource" xlink:label="accountingEntries_lbl"
      xlink:role="http://www.xbrl.org/2003/role/documentation" xml:lang="en">
      Root for XBRL GL. No entry made here.</label>
    <label xlink:type="resource" xlink:label="accountingEntries_lbl"
      xlink:role="http://www.xbrl.org/2003/role/label" xlink:title="gl-cor_accountingEntries_en" xml:lang="en">
      Accounting Entries</label>
    <labelArc xlink:type="arc"
      xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"
      xlink:from="accountingEntries" xlink:to="accountingEntries_lbl"/>
        ...
  </labelLink>
</linkbase>
```

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The Label Linkbase uses the <label xlink:type="resource"> element, which provides labels and documentation, along with the <loc> element.

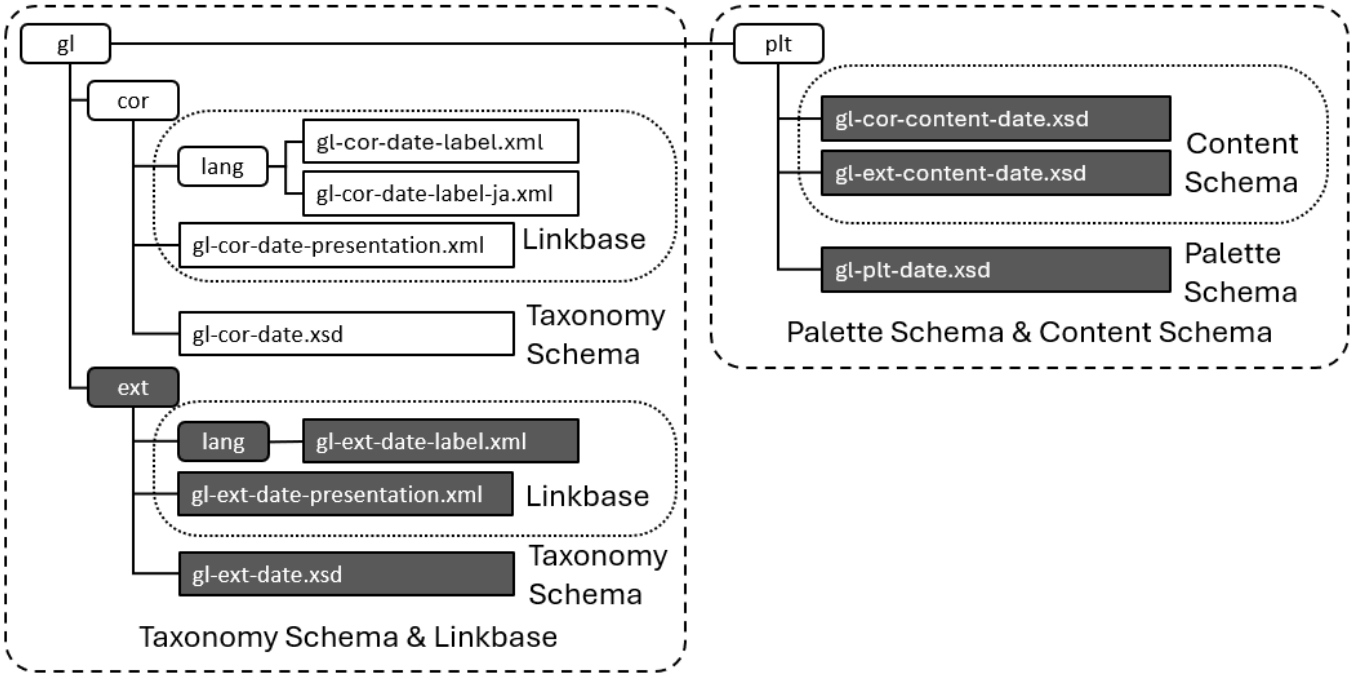
<labelArc> links <label> and <loc> elements.

```
A <loc> with xlink:role="http://www.xbrl.org/2003/role/documentation" defines the
element's documentation.
A <loc> with xlink:role="http://www.xbrl.org/2003/role/label" defines the element's
label.
```

If both have the same value for the xlink:label attribute, only one <labelArc> is used.

3 Extending with palette

Taxonomy developers can create their own extension module, GL-EXT, as explained below. The required extension involves adding, changing, or deleting tuples or items.



3.1 Requirements

- **Requirement 1**

Suppose the taxonomy developer wants to add a document-level total amount tuple in entryHeader, which currently only defines the debit total and credit total amounts.

- **Requirement 2**

Suppose the taxonomy developer wants to modify the enumeration provided by the GEN module, such as gl-cor:entriesType defined under gl-cor:documentInfo, which currently only supports the following values: account, balance, entries, journal, ledger, assets, trialbalance, taxtables, mapping, versioning, master_file, trade_documents, profile_compliant, and other.

3.2 Addition of Total Amount tuple

3.2.1 Defining the extension directory

Firstly, define the extension module directory adjacent to the existing modules. Simply adding a new content schema will not resolve the dependency of the linkbase on the element definition in the taxonomy schema, as explained in the previous text. In our example, define the "gl/ext" directory as shown in the figure.

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3.2.2 Defining the Taxonomy Schema for the EXT module

This file contains the following:

gl-ext-2015-03-25.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<schema targetNamespace="http://www.xbrl.org/int/gl/ext/2015-03-25"
  elementFormDefault="qualified" attributeFormDefault="unqualified"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xbrll="http://www.xbrl.org/2003/linkbase"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:xbrli="http://www.xbrl.org/2003/instance"
  xmlns:gl-cor="http://www.xbrl.org/int/gl/cor/2015-03-25"
  xmlns:gl-ext="http://www.xbrl.org/int/gl/ext/2015-03-25"
  xmlns:gl-gen="http://www.xbrl.org/int/gl/gen/2015-03-25">
  <annotation>
    <appinfo>
      <xbrll:linkbaseRef xlink:type="simple"
        xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"
        xlink:href="gl-ext-2015-03-25-presentation.xml"
        xlink:title="Presentation Links, all"
        xlink:role="http://www.xbrl.org/2003/role/presentationLinkbaseRef"/>
    </appinfo>
  </annotation>
  <import namespace="http://www.xbrl.org/2003/instance"
    schemaLocation="http://www.xbrl.org/2003/xbrl-instance-2003-12-31.xsd"/>
  <import namespace="http://www.xbrl.org/int/gl/gen/2015-03-25"
    schemaLocation="../gen/gl-gen-2015-03-25.xsd"/>
  <element name="totalAmounts" id="gl-ext_totalAmounts" type="gl-ext:totalAmountsComplexType"
    substitutionGroup="xbrli:tuple" nillable="true"/>
  <element name="totalAmountType" id="gl-ext_totalAmountType" type="gl-ext:totalAmountTypeItemType"
    substitutionGroup="xbrli:item" nillable="true" xbrli:periodType="instant"/>
  <element name="totalAmount" id="gl-ext_totalAmount" type="gl-ext:totalAmountItemType"
    substitutionGroup="xbrli:item" nillable="true" xbrli:periodType="instant"/>
</schema>
```

Define the taxonomy schema gl-ext-2015-03-25.xsd for the EXT module, adding the totalAmounts tuple, totalAmountType item, and totalAmount item. Also, define the reference to the presentation linkbase gl-ext-2015-03-25-presentation.xml for the EXT module.

3.2.3 Defining the Presentation Linkbase

This file contains the following:

gl-ext-2015-03-25-presentation.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<linkbase xmlns="http://www.xbrl.org/2003/linkbase"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="http://www.xbrl.org/2003/linkbase http://www.xbrl.org/2003/xbrl-linkbase-2003-12-31.xsd">
  <presentationLink xlink:type="extended" xlink:role="http://www.xbrl.org/2003/role/link">
    <loc xlink:type="locator" xlink:href="../cor/gl-cor-2015-03-25.xsd#gl-cor_entryHeader"
      xlink:label="entryHeader" xlink:title="entryHeader"/>
    <loc xlink:type="locator" xlink:href="gl-ext-2015-03-25.xsd#gl-ext_totalAmounts"
      xlink:label="totalAmounts" xlink:title="totalAmounts"/>
    <presentationArc xlink:type="arc" xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
      xlink:from="entryHeader" xlink:to="totalAmounts"
```

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```
      xlink:title="presentation: entryHeader to totalAmounts" order="395.0"/>
    <loc xlink:type="locator" xlink:href="gl-ext-2015-03-25.xsd#gl-ext_totalAmount"
      xlink:label="totalAmount" xlink:title="totalAmount"/>
    <presentationArc xlink:type="arc" xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
      xlink:from="totalAmounts" xlink:to="totalAmount"
      xlink:title="presentation: entryHeader to totalAmount" order="10.0"/>
    <loc xlink:type="locator" xlink:href="gl-ext-2015-03-25.xsd#gl-ext_totalAmountType"
      xlink:label="totalAmountType" xlink:title="totalAmountType"/>
    <presentationArc xlink:type="arc" xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
      xlink:from="totalAmounts" xlink:to="totalAmountType"
      xlink:title="presentation: entryHeader to totalAmountType" order="20.0"/>
  </presentationLink>
</linkbase>
```

The <presentationLink> defines the presentation link, and the <loc> specifies the referencing element. This linkbase is located adjacent to the taxonomy schema file gl-ext-2015-03-25.xsd. The order attribute in <presentationArc> specifies the position of the arc in the final presentation linkbase. In this case, we want to place the totalAmounts tuple just before the entryDetail tuple, with order="395.0".

3.2.4 Defining the Label Linkbase

This file contains the following:

gl-ext-2015-03-25-label.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<linkbase
  xsi:schemaLocation="http://www.xbrl.org/2003/linkbase http://www.xbrl.org/2003/xbrl-linkbase-2003-12-31.xsd"
  xmlns="http://www.xbrl.org/2003/linkbase"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xlink="http://www.w3.org/1999/xlink">
  <labelLink xlink:type="extended" xlink:role="http://www.xbrl.org/2003/role/link">
    <loc xlink:type="locator" xlink:href="../gl-ext-2015-03-25.xsd#gl-ext_totalAmounts" xlink:label="totalAmounts"/>
    <label xlink:type="resource" xlink:label="totalAmounts_lbl"
xlink:role="http://www.xbrl.org/2003/role/documentation"
      xml:lang="en">A tuple that groups the total amount with its corresponding type .</label>
    <label xlink:type="resource" xlink:label="totalAmounts_lbl" xlink:role="http://www.xbrl.org/2003/role/label"
      xlink:title="gl-ext_totalAmounts_en" xml:lang="en">Total Amounts</label>
    <labelArc xlink:type="arc" xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"
      xlink:from="totalAmounts" xlink:to="totalAmounts_lbl"/>
    <loc xlink:type="locator" xlink:href="../gl-ext-2015-03-25.xsd#gl-ext_totalAmount" xlink:label="totalAmount"/>
    <label xlink:type="resource" xlink:label="totalAmount_lbl"
xlink:role="http://www.xbrl.org/2003/role/documentation"
      xml:lang="en">Represents the total amount values at the entryHeader level. This provides an aggregated view of
financial values associated with an entry.</label>
    <label xlink:type="resource" xlink:label="totalAmount_lbl" xlink:role="http://www.xbrl.org/2003/role/label"
      xlink:title="gl-ext_totalAmount_en" xml:lang="en">Total Amount</label>
    <labelArc xlink:type="arc" xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"
      xlink:from="totalAmount" xlink:to="totalAmount_lbl"/>
    <loc xlink:type="locator" xlink:href="../gl-ext-2015-03-25.xsd#gl-ext_totalAmountType"
xlink:label="totalAmountType"/>
    <label xlink:type="resource" xlink:label="totalAmountType_lbl"
      xlink:role="http://www.xbrl.org/2003/role/documentation"
      xml:lang="en">Specifies the type of total amount at the entryHeader level. It differentiates various total values
allowing precise classification and interpretation.</label>
    <label xlink:type="resource" xlink:label="totalAmountType_lbl" xlink:role="http://www.xbrl.org/2003/role/label"
      xlink:title="gl-ext_totalAmountType_en" xml:lang="en">Total Type</label>
    <labelArc xlink:type="arc" xlink:arcrole="http://www.xbrl.org/2003/arcrole/concept-label"
```

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```
      xlink:from="totalAmountType" xlink:to="totalAmountType_lbl"/>
  </labelLink>
</linkbase>
```

The EXT Label Linkbase defines labels and definitions for the elements created in the EXT module. The lang directory contains multilingual versions of the label linkbases. This linkbase is not imported in the taxonomy schema but in the palette schema.

3.2.5 Defining EXT Content Schema

This file contains the following:

gl-ext-content-2015-03-25.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<schema targetNamespace="http://www.xbrl.org/int/gl/ext/2015-03-25"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xbrli="http://www.xbrl.org/2003/instance"
  xmlns:gl-cor="http://www.xbrl.org/int/gl/cor/2015-03-25"
  xmlns:gl-ext="http://www.xbrl.org/int/gl/ext/2015-03-25"
  elementFormDefault="qualified" attributeFormDefault="unqualified">
  <import namespace="http://www.xbrl.org/2003/instance"
    schemaLocation="http://www.xbrl.org/2003/xbrl-instance-2003-12-31.xsd"/>
  <include schemaLocation="../../ext/gl-ext-2015-03-25.xsd"/>
  <complexType name="totalAmountsComplexType">
    <complexContent>
      <restriction base="anyType">
        <sequence>
          <element ref="gl-ext:totalAmount" minOccurs="1" maxOccurs="1"/>
          <element ref="gl-ext:totalAmountType" minOccurs="0" maxOccurs="1"/>
        </sequence>
        <attribute name="id" type="ID"/>
      </restriction>
    </complexContent>
  </complexType>
  <complexType name="totalAmountItemType">
    <simpleContent>
      <restriction base="xbrli:monetaryItemType">
      </restriction>
    </simpleContent>
  </complexType>
  <complexType name="totalAmountTypeItemType">
    <simpleContent>
      <restriction base="xbrli:tokenItemType">
        <enumeration value="line"/>
        <enumeration value="tax"/>
        <enumeration value="taxable"/>
        <enumeration value="other"/>
      </restriction>
    </simpleContent>
  </complexType>
</schema>
```

The <include schemaLocation="../../ext/gl-ext-2015-03-25.xsd"/> specifies the inclusion of the taxonomy schema, and the datatype definitions for the newly added elements are also specified in the EXT Content Schema.

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3.2.6 Modifying the COR Content Schema

This file contains the following:

gl-cor-content-2015-03-25.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- (c) XBRL International.  See http://www.xbrl.org/legal -->
<schema targetNamespace="http://www.xbrl.org/int/gl/cor/2015-03-25"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns="http://www.w3.org/2001/XMLSchema"
  xmlns:xbrli="http://www.xbrl.org/2003/instance"
  xmlns:gl-cor="http://www.xbrl.org/int/gl/cor/2015-03-25"
  xmlns:gl-ext="http://www.xbrl.org/int/gl/ext/2015-03-25"
    elementFormDefault="qualified" attributeFormDefault="unqualified">
  <import namespace="http://www.xbrl.org/2003/instance"
    schemaLocation="http://www.xbrl.org/2003/xbrl-instance-2003-12-31.xsd"/>
  <import namespace="http://www.xbrl.org/int/gl/ext/2015-03-25"
    schemaLocation="gl-ext-content-2015-03-25.xsd"/>
  <include schemaLocation="../../cor/gl-cor-2015-03-25.xsd"/>
    ...
  <complexType name="entryHeaderComplexType">
    <complexContent>
      <restriction base="anyType">
        <sequence>
            ...
          <element ref="gl-ext:totalAmounts" minOccurs="0" maxOccurs="unbounded"/>
          <element ref="gl-cor:entryDetail" minOccurs="0" maxOccurs="unbounded"/>
        </sequence>
        <attribute name="id" type="ID"/>
      </restriction>
    </complexContent>
  </complexType>
    ...
</schema>
```

The COR Content Schema file **imports** the EXT Content Schema and **includes** the EXT Taxonomy Schema.

Add the newly created tuple gl-ext:totalAmounts under the complexType entryHeaderComplexType.

3.2.7 Defining the EXT Palette Schema

This file contains the following:

gl-plt-2015-03-25.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema
      targetNamespace="http://www.xbrl.org/int/gl/plt/2015-03-25"
      attributeFormDefault="unqualified" elementFormDefault="qualified"
      xmlns:xs="http://www.w3.org/2001/XMLSchema"
      xmlns:xlink="http://www.w3.org/1999/xlink"
      xmlns:link="http://www.xbrl.org/2003/linkbase">
  <xs:annotation>
    <xs:appinfo>
      <link:linkbaseRef xlink:type="simple" xlink:role="http://www.xbrl.org/2003/role/labelLinkbaseRef"
        xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"
        xlink:href="../../cor/lang/gl-cor-2015-03-25-label.xml" xlink:title="Label Links, all"/>
```

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```
      <link:linkbaseRef xlink:type="simple" xlink:role="http://www.xbrl.org/2003/role/labelLinkbaseRef"
        xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"
        xlink:href="../../ext/lang/gl-ext-2015-03-25-label.xml" xlink:title="Label Links, all"/>
    </xs:appinfo>
  </xs:annotation>
  <xs:import namespace="http://www.xbrl.org/int/gl/cor/2015-03-25" schemaLocation="gl-cor-content-2015-03-25.xsd"/>
</xs:schema>
```

The Palette Schema for the EXT extension specifies the label linkbase for both COR and EXT and imports the COR Content Schema defined in the previous step.

3.3 Modifying the Enumeration entriesType

Modifying taxonomy elements is achieved by removing predefined elements and adding new ones. Adding new elements is explained in the previous section. This section explains how to remove an element from a tuple and how to remove an arc from a linkbase to achieve Requirement 2: modifying the enumeration of entriesType.

Firstly, define the new gl-ext:entriesType in the EXT Taxonomy Schema, and in the COR Content Schema, assign it under gl-cor:documentInfo, removing the predefined gl-cor:entriesType. The value of gl-ext:entriesType is also defined in the COR Content Schema, resulting in the new enumeration. Replacing entriesType in the Presentation Linkbase is achieved by defining the same form to arc, with the <presentationArc> using use="prohibited" and priority="1".

3.3.1 Adding the New Element in the EXT Taxonomy Schema

Adding the following line creates the new element gl-ext:entriesType:

gl-ext-2015-03-25.xsd

```
<element name="entriesType" id="gl-ext_entriesType" type="gl-ext:entriesTypeItemType"
  substitutionGroup="xbrli:item" nillable="true" xbrli:periodType="instant"/>
```

3.3.2 Modifying the Presentation Linkbase

Adding the following line creates an arc from documentInfo to gl-ext:entriesType and removes the arc to gl-cor:entriesType:

gl-ext-2015-03-25-presentation.xml

```
  <loc xlink:type="locator" xlink:href="../cor/gl-cor-2015-03-25.xsd#gl-cor_documentInfo"
    xlink:label="documentInfo" xlink:title="documentInfo"/>
  <loc xlink:type="locator" xlink:href="gl-ext-2015-03-25.xsd#gl-ext_entriesType"
    xlink:label="entriesType" xlink:title="entriesType"/>
  <presentationArc xlink:type="arc" xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
    xlink:from="documentInfo" xlink:to="entriesType"
    xlink:title="presentation: documentInfo to entriesType" order="10.0"/>
  <loc xlink:type="locator" xlink:href="../cor/gl-cor-2015-03-25.xsd#gl-cor_entriesType"
    xlink:label="cor_entriesType" xlink:title="entriesType"/>
  <presentationArc xlink:type="arc" xlink:arcrole="http://www.xbrl.org/2003/arcrole/parent-child"
    xlink:from="documentInfo" xlink:to="cor_entriesType" use="prohibited" priority="1"
    xlink:title="prohibit presentation: documentInfo to entriesType" order="10.0"/>
```

3.3.3 Adding new enumeration in the EXT Content Schema

Adding the following line creates a new enumeration for gl-ext:entriesType:

gl-ext-content-2015-03-25.xsd

```
<complexType name="entriesTypeItemType">
  <simpleContent>
```

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```
      <restriction base="xbrli:tokenItemType">
        <enumeration value="ex-1"/>
        <enumeration value="ex-2"/>
        <enumeration value="other"/>
      </restriction>
    </simpleContent>
  </complexType>
```

3.3.4 Modifying the COR Content Schema

This file contains the following:

gl-cor-content-2015-03-25.xsd

```
  <complexType name="documentInfoComplexType">
    <complexContent>
      <restriction base="anyType">
        <sequence>
          <element ref="gl-ext:entriesType" maxOccurs="1"/>
          <element ref="gl-cor:uniqueID" minOccurs="0" maxOccurs="1"/>
          <element ref="gl-cor:revisesUniqueID" minOccurs="0" maxOccurs="1"/>
          <element ref="gl-cor:revisesUniqueIDAction" minOccurs="0" maxOccurs="1"/>
          <element ref="gl-cor:language" minOccurs="0" maxOccurs="1"/>
          <element ref="gl-cor:creationDate" minOccurs="0" maxOccurs="1"/>
          <element ref="gl-cor:entriesComment" minOccurs="0" maxOccurs="1"/>
          <element ref="gl-cor:periodCoveredStart" minOccurs="0" maxOccurs="1"/>
          <element ref="gl-cor:periodCoveredEnd" minOccurs="0" maxOccurs="1"/>
        </sequence>
        <attribute name="id" type="ID"/>
      </restriction>
    </complexContent>
  </complexType>
```


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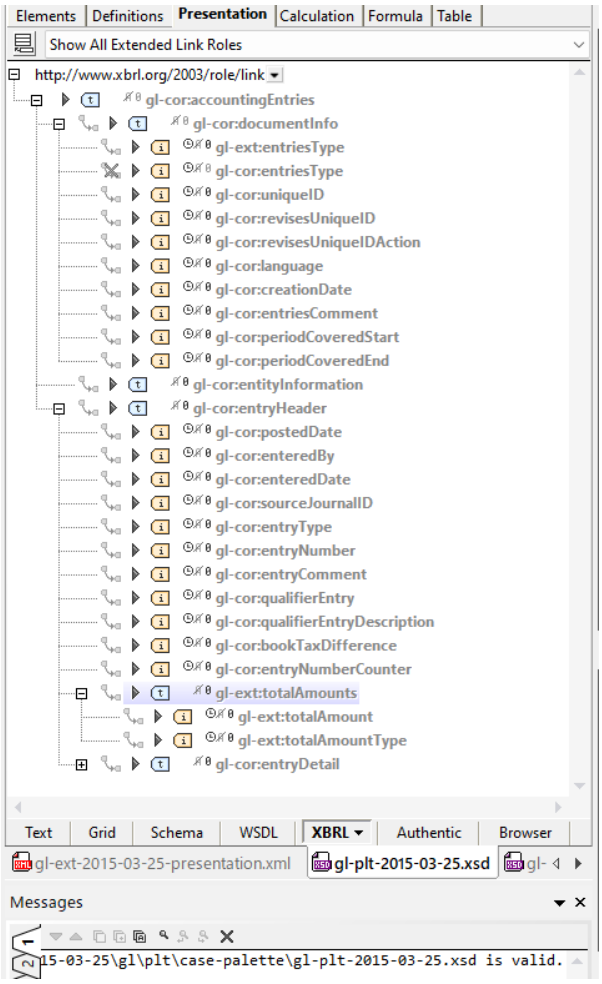
Add the newly created tuple gl-ext:entriesType replacing gl-cor:entriesType under the complexType documentInfoComplexType.



3.4 Result

All modifications are made to support the requirements for the extension.

The resulting taxonomy, checked with XMLSpy, is as follows:

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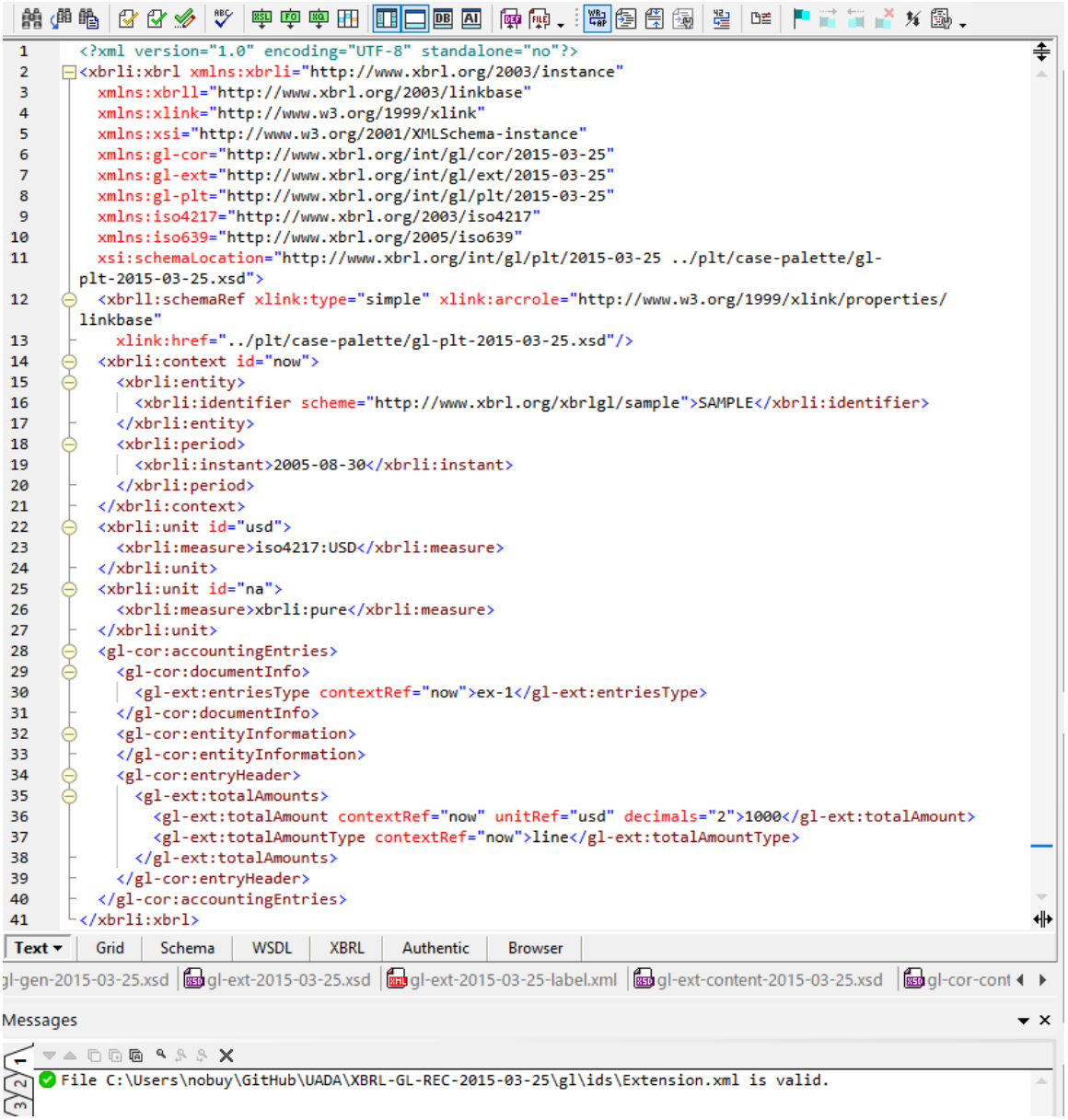
An XBRL GL instance document, checked against this extension with XMLSpy, is as follows:



```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<xbrli:xbrl xmlns:xbrli="http://www.xbrl.org/2003/instance"
  xmlns:xbrll="http://www.xbrl.org/2003/linkbase"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:gl-cor="http://www.xbrl.org/int/gl/cor/2015-03-25"
  xmlns:gl-ext="http://www.xbrl.org/int/gl/ext/2015-03-25"
  xmlns:gl-plt="http://www.xbrl.org/int/gl/plt/2015-03-25"
  xmlns:iso4217="http://www.xbrl.org/2003/iso4217"
  xmlns:iso639="http://www.xbrl.org/2005/iso639"
  xsi:schemaLocation="http://www.xbrl.org/int/gl/plt/2015-03-25 ../plt/case-palette/gl-plt-2015-03-25.xsd">
  <xbrll:schemaRef xlink:type="simple" xlink:arcrole="http://www.w3.org/1999/xlink/properties/linkbase"
    xlink:href="../plt/case-palette/gl-plt-2015-03-25.xsd"/>
  <xbrli:context id="now">
    <xbrli:entity>
      <xbrli:identifier scheme="http://www.xbrl.org/xbrlgl/sample">SAMPLE</xbrli:identifier>
    </xbrli:entity>
    <xbrli:period>
      <xbrli:instant>2005-08-30</xbrli:instant>
    </xbrli:period>
  </xbrli:context>
  <xbrli:unit id="usd">
    <xbrli:measure>iso4217:USD</xbrli:measure>
  </xbrli:unit>
  <xbrli:unit id="na">
    <xbrli:measure>xbrli:pure</xbrli:measure>
  </xbrli:unit>
  <gl-cor:accountingEntries>
    <gl-cor:documentInfo>
      <gl-ext:entriesType contextRef="now">ex-1</gl-ext:entriesType>
    </gl-cor:documentInfo>
    <gl-cor:entityInformation>
    </gl-cor:entityInformation>
    <gl-cor:entryHeader>
      <gl-ext:totalAmounts>
        <gl-ext:totalAmount contextRef="now" unitRef="usd" decimals="2">1000</gl-ext:totalAmount>
        <gl-ext:totalAmountType contextRef="now">line</gl-ext:totalAmountType>
      </gl-ext:totalAmounts>
    </gl-cor:entryHeader>
  </gl-cor:accountingEntries>
</xbrli:xbrl>
```

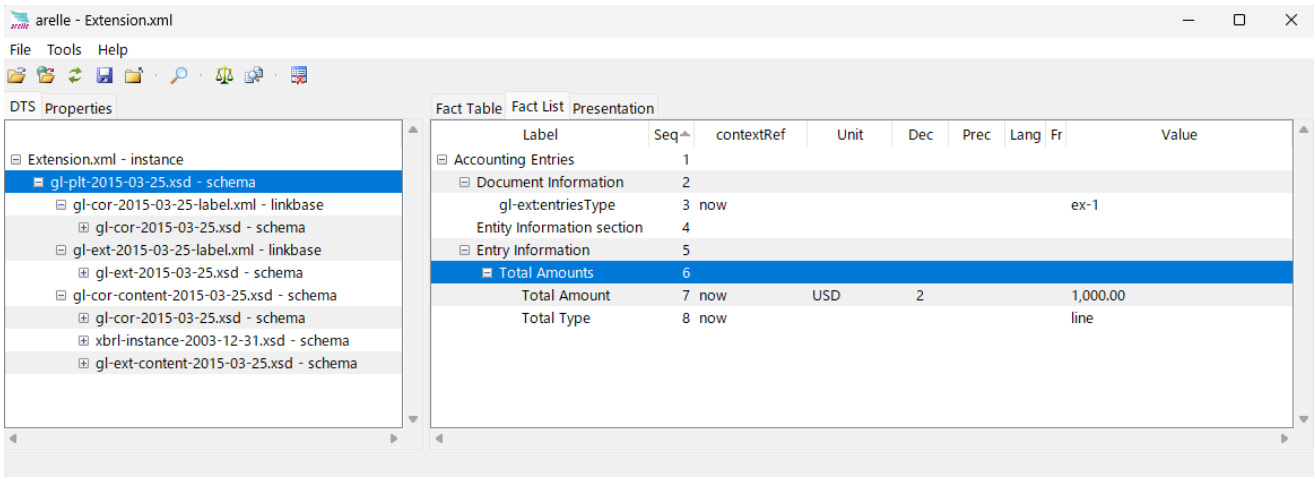
Text | Grid | Schema | WSDL | XBRL | Authentic | Browser

gl-gen-2015-03-25.xsd | gl-ext-2015-03-25.xsd | gl-ext-2015-03-25-label.xml | gl-ext-content-2015-03-25.xsd | gl-cor-cont

Messages

File C:\Users\nobuy\GitHub\UADA\XBRL-GL-REC-2015-03-25\gl\ids\Extension.xml is valid.

The same instance document, checked against this extension with Arelle, is as follows:



arelle - Extension.xml

File Tools Help

DTS Properties

- Extension.xml - instance
  - gl-plt-2015-03-25.xsd - schema
    - gl-cor-2015-03-25-label.xml - linkbase
      - gl-cor-2015-03-25.xsd - schema
    - gl-ext-2015-03-25-label.xml - linkbase
      - gl-ext-2015-03-25.xsd - schema
    - gl-cor-content-2015-03-25.xsd - schema
      - gl-cor-2015-03-25.xsd - schema
      - xbrl-instance-2003-12-31.xsd - schema
      - gl-ext-content-2015-03-25.xsd - schema

Fact Table | Fact List | Presentation

Label	Seq	contextRef	Unit	Dec	Prec	Lang	Fr	Value
Accounting Entries	1							
Document Information	2							
gl-ext:entriesType	3	now						ex-1
Entity Information section	4							
Entry Information	5							
Total Amounts	6							
Total Amount	7	now	USD	2				1,000.00
Total Type	8	now						line

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