X-lexicon 4.0

Brief introduction

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Inventory of changes

X-definition 4.0

Default version X-definition 4.0

Contents

Notice

This text assumes a basic knowledge of the X-definition techology.
Questions, remarks and bug reports please send to: xdef@syntea.cz.
The actual version of X-definition you can download from: http://www.xdef.org/

1 Terms and abbreviations

X-definition	1. The language used for description of the structure, content, processing and construction of XML objects. 2. XML element in the X-definition language.
X-lexicon	Technology for creating lexicons in different languages
X-position	X-position is the form of description of a location of model in the set of X-definitions (in the XDPool)

2 X-lexicon

X-lexicon technology enables to work with XML data modified to different local languages. The names of models of elements and attributes are modified to given language according to the specification of X-lexicon in X-definition source files.

X-lexicon is a XML special element with the namespace of X-definition where are described such local names of XML elements and attributes items in the models in X-definition where it is required modification according to given local language.

Let us have a X-definition describing an insurance contract:

```
<xd:def xmlns:xd = "http://www.org.xdef/4.0" xd:name = "contract">
  <Contract
    Number = "required int()"
    Date   = "required date()">
    <Owner
      Name      = "required string()"
      CompanyID = "required num(8)" />
  </Contract>
...
</xd:def>
```

The items are specified in separate lines. The specification starts with X-position of an item (element or attribute) and after white spaces follows the name in the specified language. Note that name must be valid XML name,

As an example let us describe lexicon for the English language and for the German language. The models in the project are described in the English language, so we specify the English language is default. The required modifications for German language will be:

```
Contract -> Vertrag, Number -> Nummer, Date -> Datum, Owner -> Inhaber, CompanyID -> FirmenID.

Note the attribute name Name in the element model Owner is same in both languages, so it will not be changed.

The description for each language is written to the element “xd:lexicon” in the namespace of X-definition.
For each required language must be specified one element xd:lexicon. In the attribute "language" must be
specified the language name which it describes. The language name must be any valid Java identifier. If in
given language are not changes of tags from a model then the attribute xd:default may be specified as “true”,
ie. no transformation will be provided for given language.

Each line of the text content of xd:lexicon element describes X-position of an item and required change of
name. Not described items will remain without change.
```

So the xd:lexicon elements for the model of Contract from the example above for English language will be:

```
<xd:lexicon xmlns:xd="http://www.org.xdef/4.0" language="eng" default="yes"/>
```

The lexicon for the German language will be:

```
<xd:lexicon xmlns:xd="http://www.org.xdef/4.0" language="deu">
  contract#Contract                 Vertrag
  contract#Contract/@Number         Nummer
  contract#Contract/@Date           Datum
  contract#Contract/Owner           Inhaber
  contract#Contract/Owner/@CompanyID FirmenID
</xd:lexicon>
```

.

The xd:lexicon elements may be inserted to an X-definition:

```
<xd:def xmlns:xd = "http://www.org.xdef/4.0" xd:name = "contract">
  <Contract
    Number = "required int()"
    Date   = "required date()">
    <Owner
      Name      = "required string()"
      CompanyID = "required num(8)" />
  </Contract>

 <xd:lexicon language="eng" default="yes"/>

<xd:lexicon language="deu">
  contract#Contract                 Vertrag
  contract#Contract/@Number         Nummer
  contract#Contract/@Date           Datum
  contract#Contract/Owner           Inhaber
  contract#Contract/Owner@CompanyID FirmenID
</xd:lexicon>

</xd:def>
```

3 Validation of input XML data

If you have the data in the specific language (which differs from the default one), you must specify to the XDDocument object the language in which the data will be processed by the method setLexiconLanguage. The parameter of this method contains the name of language.

Let's hahe the XML document in the German languge:

```
<Vertrag Nummer = "123456" Datum  = "2019-02-25">
    <Inhaber Name = "Syntea" FirmenID = "87654321" />
</Vertrag>
```

If you compile X-definition from the example above and you have the compiled XDPool in the field xpool, you must first create the XDDocument, the set the lexicon language and then to parse the input data:

```
XDDocument xdoc = xpool.createXDDocument("contract");
xdoc.setLexiconLanguage("deu");
xdoc.xparse(inputData, reporter);
```

4 Translation of input XML data to different language.

If you have to translate the data from a language to another language you may use the method xtranslate on the XDDocument object. Following example tranlates the given input data in German languge to the English language:

```
XDDocument xdoc = xpool.createXDDocument("contract");
xdoc.xtranlate(input, "deu", "eng");
```

If you have input data in German version:

```
<Vertrag Nummer = "123" Datum = "2018-03-11">
  <Inhaber Name = "Franz Bayer" FirmenID = "00123456" />
</Vertrag>
```

If you run Java program:

```
XDDocument xdoc = xpool.createXDDocument("contract");
xdoc.translate(inputData, "deu", "eng", reporter);
```

The result will bet the English version:

```
<Contract Number = "123" Date = "2018-03-11">
  <Inhaber Name = "Franz Bayer" CompanyID = "00123456" />
</Contract>
```