



X-lexicon 4.0

Brief introduction

Václav Trojan

Version: 4.0

Date: 2020-03-

Inventory of changes

X-definition 4.0

Default version X-definition 4.0

Contents

1	Terms and abbreviations	4
2	X-lexicon	4
3	Validation of input XML data	5
4	Translation of input XML data to different language.	5

Notice

This text assumes a basic knowledge of the X-definition technology.

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>
```

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 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 special element 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. 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 and German language will be:

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

<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 written to separate XML documents or to be inserted to any of 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 have the XML document in the German language:

```

<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, then set the lexicon language and then to parse the input data:

```

XDDocument xdoc = xpool.createXDDocument("contract");
xdoc.setLexiconLanguage("deu");
xdoc.xparse(input...);

```

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 translates the given input data in German language to the English language:

```

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

```