OIOUBL Guideline

OIOUBL Datatypes

UBL 2.0 Datatyper

G29

Version 1.3

Colophon

Contact:

Danish Agency for Digitisation

E-mail: support@nemhandel.dk

OIOUBL Version 2.02
July 2015
Danish Agency for Digitisation

Landgreven 4
DK-1017 Copenhagen
Phone +45 3392 5200
http://www.digst.dk
digst@digst.dk

Contents

1. Preface

This guideline is one out of a series of documents describing the purpose and use of the business documents that comprise the Danish localization of UBL 2.0, known as OIOUBL.

For each business document, a guideline document has been prepared, as well as general guidelines describing the use of elements that apply across the documents.

1.1. Purpose of this document

The purpose of this document is to explain the use of the data types used in OIOUBL. OIOUBL is based upon UBL 2.0, and applies UN/CEFACT Core Component Technical Specification Data types. This document covers the use of these data types.

1.2. Conclusions and Recommendations

The target audience of this document is technicians or business professional involved in making e-business work in practice.

1.3. Changes in version 1.3

In this latest update of this guideline the following has been changed:

- Questions and answers from FAQ on OIOUBL.info has been incorporated

2. Relevant UBL classes

The data types are the basic types in which these guidelines are expressed. In the following sections, the data types and the general usage guidelines will be described in further detail. All data types are UN/CEFACT Core Component Technical Specification data types defined with W3 schema data types (see http://www.w3.org/TR/xmlschema-0/#SimpleTypeFacets).

The data types uses in UBL are:

- Amount
- Binary
- Code
- Time
- Date
- Identifier
- Indicator
- Measure
- Numeric
- Percent
- Rate
- Value
- Amount
- Text
- Name

3. Specification

The following sections contain further descriptions of the use of relevant classes and fields.

3.1. Use of an Amount

An Amount has the following attributes:

Attribute	Use	Example	OIOUBL Recommendation
CurrencyID	Mandatory	"DKK"	Mandatory, values must be available in ISO 4217
Content	XSD:Decimal type	10000.25	Negative values should be avoided.

3.2. Use of Binary objects

Binary objects in UBL are used solely for specifying attachments.

Attribute	Use	Example	OIOUBL Recommendation
format	Description of the format, if mimeCode is not available.		Not used
mimeCode	Describes the content as a code	"application/pdf"	Must be used. See guideline ref. G21
encodingCode	Description of decoding algorithm.	"Base64"	Optional. If specified, it must be "Base64".
characterSetCode	Description of the character set used, if it is a text type.		Optional. See guideline ref. G21
uri	Description of the location of a document copy, or the document itself.		Not used Use "external reference" instead.
fileName	Specifies the name of the file being transferred.	"drawing5.jpg"	For information purposes only.
Content	Series of octets (bytes)		

3.3. Use of Code

Code types are used to delimit the values allowed for an element (BBIE) from a list of options. Code types differ from IDs in that the allowed values are publicly known, and may be determined at the time of receipt. OIOUBL operates with the code types:

- Static codes, which are embedded in the standard.
- Publicly known codes which can be updated, e.g. ISO 4217.
- Bilaterally agreed codes

Attribute	Use	Example	OIOUBL Recommendation
listID	Identifies the list	urn:oioubl:codelist:addresstypecode-1.1	Mandatory for UBL codes
listAgencyID	Identifies the issuer of the list	320 (Danish National IT and Telecom Agency)	Mandatory for UBL codes
listAgencyName	Specifies the name of the issuer of the list		Optional
listVersionID	Version of this list		Optional

name	Name of the list		Optional
languageID	The language in which the list is specified.		Optional, as all code lists are specified in English. If specified, the value must be "en", "uk", "EN" or "UK".
listURI	Link to the location of the list.		Optional
listSchemeURI	Link to the location of the list schema.		Not used
Content	Xsd:normalizedString		Specified exactly as in the list. Please note the distinguishing between upper and lower case letters.

Static and bilaterally agreed codes are typically specified without attributes, whereas publicly known codes may benefit from the use of the metadata that may be provided by the attributes. In these, either the listURI or listID must be specified. For the Danish OIOUBL adaptation a series of code lists has been prepared. When these are used, the attribute "listID" must be filled with the value that identifies the code list, and "listAgencyID" must be filled with the value that identifies the issuer of the codelist. This type of code lists are named a "codelist" in the urn, e.g. "urn:oioubl:**codelist**:[name]-1.0".

3.4. Use of Time

For the use of time the ISO 8601 standard format is recommended: "hh:mm:ss". If the sale takes place across national borders with different time zones, the following format should be used, e.g. "09:30:00+01:00" to represent the time 09:30 hrs in the Copenhagen time zone. All xsd:time formats are allowed.

3.5. Use of Date

For specifying dates the ISO 8601 standard format of "YYYY-MM-DD" is recommended, e.g. "2006-08-18" to represent August 18th, 2006. Gregorian time is used.

3.6. Use of Identifiers

Identifiers are keys that are owned by either the sender, receiver or a third party. If the keys used are owned by either sender or receiver, no meta data has to be specified by means of attributes. The below table specifies the use of attributes for the identifier types when they are owned by a third party.

Attribute	Use	Example	OIOUBL Recommendation
schemeID	Identifies the ID type	GLN	Mandatory for OIOUBL ID-lists
schemeName	Name of the ID type		Not used
schemeAgencyID	Specifies the ID of the ID issuer	9 (IUN/ECE)	Used when the issuer of the Id is central (See examples below)
schemeAgencyName	The version of the schema that defines the type.	UN/ECE	Not used
schemeVersionID	Name of the version		Not used
languageID	The language in which the list is specified.		Not used
schemeDataURI	Link to the location of the list.	urn:oioubl:id:paymentid-1.0	Not used
schemeURI	Link to the location of the list schema.		Not used
Content	XSD:token		Not used

An identifier must not contain whitespace characters.

3.7. Which types of identifier may be used?

In cases where the identifier originates from either the buyer or seller of the document, no metadata is specified by means of ID attributes. This is shown in the example below

```
<cac:Contact>
    <cbc:ID>7778</cbc:ID>
...
</cac:Contact>
```

In cases where only one type of identifier is allowed and the value set is defined in OIOUBL, "schemeID" is mandatory and used for specifying the ID list in which the ID is listed as an instance and "schemeAgencyID" specifies the issuer of the list. An example of this is shown below:

```
<cbc:ProfileID sschemeAgencyID="320" schemeID="urn:oioubl:id:profileid-1.4">
  Procurement-OrdExtR-BilSim-1.0
</cbc:ProfileID>
```

In cases where the type of ID should be identified, the type is mandatory and specified in "schemeID". For danish scheme Id's the issuer party is always the Danish Agency for Digitisation, and it is not specified. For other ID types e.g. GLN and DUNS the issuer must be specified in "schemeAgencyID". This is shown as an example below:

```
<cac:PartyIdentification>
    <cbc:ID schemeID="DK:CVR">DK12345678</cbc:ID>
</cac:PartyIdentification>
<cac:PartyIdentification>
    <cbc:ID schemeAgencyID="9" schemeID="GLN">5798000416604</cbc:ID>
</cac:PartyIdentification>
```

3.7.1. Format for identifiers

Some types of identifiers are limited by a format. In the table below different types of identifiers with limitations in the format are displayed:

Identifier type	Scheme Id	Example	Format limitation
CVR number	DK:CVR	DK25646817	Must be "DK" followed by 8 digits
CPR number	DK:CPR	0710731868	Must be 10 digits. The first 6 digits must have the date format ddmmyy
GLN (Global Location Number) former EAN	GLN	5798000416642	13 digits
SE number	DK:SE	DK24567899	Must be "DK" followed by 8 digits
P number	DK:P	1920212223	10digits
UUID	Not specified	9756b4d0-8815-1029-857a-e388fe63f399	32 hexi decimal characters separated by four "-" signs (See http://www.ietf.org/rfc/rfc4122.txt)

3.8. Use of Indicators

The indicator type is xsd:boolean. Use the "true" value for true values and "false" for false values.

3.9. Specifying Measure and Quantity

Measure and quantity are defined with an xsd:decimal, and has the following attributes.

Attribute	Use	Example	OIOUBL Recommendation
UnitCode	Mandatory	"EA"	Mandatory, the values must be available in urn:un:unece:uncefact:codelist:specification:66411:2001
Content	XSD:Decimal type	10000.25	It is not recommended to use more than four decimals.

3.10. Use of Percent

Percent is an implementation of xsd:decimal. States number of hundredths, which means that entering "34.78" in a Percent type equals "0.3478". It is not recommended using more than four decimals.

3.11. Use of other numerical values

All numerical values are implementations of xsd:decimal. In UBL they exist as "Numeric", "Value", and "Rate". These types are all without attributes. The "Numeric" type is also used for sequences, even if these cannot contain decimals.

3.12. Use of Text

Text types are typically descriptions and notes. They have the following attributes:

Attribute	Use	Example	OIOUBL Recommendation
languageID	Optional	"da"	Only used when more strings are specified in different languages.
Content	Xsd:string	"handle with care"	Must be filled.

Text types must not contain CDATA elements.

3.13. Use of Name

Name types are of the type xsd:string and are used to supplement or replace indicators. It has the following attributes:

Attribute	Use	Example	OIOUBL Recommendation
languageID	Optional	"da"	Only used when a name is specified in different languages.
Content	Xsd:string	"Kurt Pedersen"	Multiple spaces should be avoided, as names are used for match in some systems. Should not be blank, and validates normalized string. Only allowed Whitespace character is a space.