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1. Preface

These guidelines form a series describing the purpose and use of the business documents that comprise the Danish localization of UBL 2.0, known as OIOUBL.

As well as general guidelines describing the use of elements used across the documents, a separate guideline has been prepared for each business document.

1.1. Purpose of this document

This guideline specifies the use of classes and elements involved with total amounts of money.

1.2. General Points

The following guidelines may be relevant in relation to this guideline:

- OIOUBL_GUIDE_PRICES (Ref. G25)
- OIOUBL_GUIDE_CURRENCY (Ref. 18)
- OIOUBL_GUIDE_ALLOWANCE (Ref. 17)
- OIOUBL_GUIDE_PAYMENT (Ref. G24)
- OIOUBL_GUIDE_TAX (Ref. G27)

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 and Elements

Amount totals are included in the following UBL 2.0 document types:

- Order
- Invoice
- CreditNote
- Reminder

Normally, the amount totals are defined at the document level in these documents. They reflect the total of the amounts shown at line level. The transaction lines also contain a line total which is based on a calculation of, among other things, quantity and price for the given line.

In addition, the amount totals for taxes, charges and allowances are also specified. The use of these totals is described in detail in their relevant guidelines, however their relation to MonetaryTotal is described below.

In the MonetaryTotal class, the amount totals are defined at document level. The calculation of the amount totals is based on the following classes/elements:

- AllowanceCharge (Document and line level, and line level under the Price class)
- TaxTotal (Document and line level)
- PrepaidPayment (Document level)
- LineExtensionAmount (Line level)

2.1. DK element names and cardinality

The tables below list the elements and their names in Danish, as well as the cardinality.

2.2. The MonetaryTotal class

Note that the qualified naming of the MonetaryTotal class indicates the document type that it is defined within:

- Order (AnticipatedMonetaryTotal)
- Invoice (LegalMonetaryTotal)
- CreditNote (LegalMonetaryTotal)
- Reminder (LegalMonetaryTotal)

All these have identical structures. In this guideline, the name MonetaryTotal is used as the common term for all these classes.

The MonetaryTotal class is comprised of the following elements:

<table>
<thead>
<tr>
<th>UK-name</th>
<th>DK-name</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>LineExtensionAmount</td>
<td>LinjeTotal</td>
<td>1</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
<td>Occurrence</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>TaxExclusiveAmount</td>
<td>AfgiftTotalEksklusivBeløb</td>
<td>0..1</td>
</tr>
<tr>
<td>TaxInclusiveAmount</td>
<td>AfgiftTotalInklusivBeløb</td>
<td>0..1</td>
</tr>
<tr>
<td>AllowanceTotalAmount</td>
<td>RabatTotal</td>
<td>0..1</td>
</tr>
<tr>
<td>ChargeTotalAmount</td>
<td>GebyrTotal</td>
<td>0..1</td>
</tr>
<tr>
<td>PrepaidAmount</td>
<td>ForudbetaltBeløb</td>
<td>0..1</td>
</tr>
<tr>
<td>PayableRoundingAmount</td>
<td>Afrundingsbeløb</td>
<td>0..1</td>
</tr>
<tr>
<td>PayableAmount</td>
<td>ForfalidentBeløb</td>
<td>1</td>
</tr>
</tbody>
</table>

Only LineExtensionAmount and PayableAmount are mandatory, but it is recommended to also specify the other elements. It is only in the LegalMonitotyTotal class that the summarized and schematon validated VAT/taxes and allowance and charges can be specified, and this information is often of great value to the receiver.

It is advised to always specify the TaxExclusiveAmount and TaxInclusiveAmount if the products are subject to VAT, so the summarized VAT and taxes are specified.
3. Description

The following section contains descriptions of the use of classes and elements for amount totals.

3.1. Amount totals format

An amount total in the MonetaryTotal classes must be specified to have two decimals, using the period/full stop (.) as its decimal separator.

Amount totals may be zero, but can never be negative\(^1\). Table 1 shows some examples:

<table>
<thead>
<tr>
<th>Amount:</th>
<th>OIOUBL format:</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10.00</td>
</tr>
<tr>
<td>9.465</td>
<td>9.47</td>
</tr>
<tr>
<td>9.464</td>
<td>9.46</td>
</tr>
<tr>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>10000.25</td>
<td>10000.25</td>
</tr>
</tbody>
</table>

Table 1. Examples of how to specify amount totals in OIOUBL.

The currency code must always be specified together with any amount total. The currencyID attribute defines the currency code according to the relevant code list. See Figure 1. for an example.

\[<\text{cbc:PayableAmount currencyID="DKK">720.00</cbc:PayableAmount}>\]

Figure 1. Use of the currencyID attribute.

In this example the currency code is "DKK" (Danish Krone). Other currency codes are described in the OIOUBL Guideline Exchange Rates and Currency Codes (Ref. G18).

3.1.1. Used Decimals

In the table below the allowed numbers of decimals are displayed:

<table>
<thead>
<tr>
<th>Element (for Invoice):</th>
<th>Number of allowed decimals</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAT/Tax</td>
<td></td>
</tr>
<tr>
<td>TaxTotal/TaxAmount</td>
<td>2</td>
</tr>
<tr>
<td>TaxTotal/TaxSubtotal/TaxableAmount</td>
<td>2</td>
</tr>
<tr>
<td>TaxTotal/TaxSubtotal/TaxAmount</td>
<td>2</td>
</tr>
<tr>
<td>Document totals</td>
<td></td>
</tr>
<tr>
<td>LegalMonetaryTotal/LineExtensionAmount</td>
<td>2</td>
</tr>
<tr>
<td>LegalMonetaryTotal/TaxExclusiveAmount</td>
<td>2</td>
</tr>
<tr>
<td>LegalMonetaryTotal/TaxInclusiveAmount</td>
<td>2</td>
</tr>
<tr>
<td>LegalMonetaryTotal/AllowanceTotalAmount</td>
<td>2</td>
</tr>
<tr>
<td>LegalMonetaryTotal/ChargeTotalAmount</td>
<td>2</td>
</tr>
<tr>
<td>LegalMonetaryTotal/PrepaidAmount</td>
<td>2</td>
</tr>
<tr>
<td>LegalMonetaryTotal/PayableRoundingAmount</td>
<td>2</td>
</tr>
</tbody>
</table>

\(^1\)NOTE: For an amount total at line level, negative values and up to 4 decimals are allowed.
### 3.1.2. Rules for rounding of decimals in OIOUBL

There are examples that rounding of decimals causes problems when validating the totals in OIOUBL.

Some of the issues that can cause the problems are:

- Some are under the impression that only two decimals are allowed on the *PriceAmount* in OIOUBL, as it was the case in OIOXML.
- Documents converted from OIOXML to OIOUBL only has two decimals.
- The retail sector is often in the situation that they need to calculate the net price by subtraction the VAT, resulting in some odd amounts increasing the risk of decimal and rounding errors.
- Companies selling large amounts are also in the risk of having big rounding errors if they do not use enough decimals on the *PriceAmount*.

The basic rule is that rounding is done as late as possible in calculations so most possible decimals are used. E.g. the *PriceAmount* is not rounded before the calculation of *LineExtensionAmount*.

Although following the described principle price differences as a result of rounding cannot totally be avoided.

For now tolerances on +/- 1.00 when schematron validating *InvoiceLine/LineExtensionAmount* are allowed in OIOUBL.

To avoid larger price differences it is recommended that the sender of the document specifies most possible decimals on *PriceAmount, BaseQuantity* and *OrderableUnitFactorRate*. Too few decimals can cause large differences as described in the example below:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Price</th>
<th>Line total</th>
</tr>
</thead>
<tbody>
<tr>
<td>10000</td>
<td>1.02</td>
<td>10200.00</td>
</tr>
<tr>
<td>10000</td>
<td>1.024</td>
<td>10240.00</td>
</tr>
</tbody>
</table>

### 3.2. Positive and negative amounts

OIOUBL Invoices and Credit notes can never have a negative document total (*PayableAmount*), since it is the document type (Invoice or Credit note) that determines whether an amount should be credited or debited.

The Invoice document total can be 0.00 if the invoice e.g. has a positive and a negative invoice line that even out the amounts.
The document total can also be 0.00 if all invoice line in an Invoice is free of charge (FreeOfChargeIndicator="true").

3.2.1. The Line total

The total for Invoice or Credit note lines can be negative as long as the document total is not negative.

A negative Invoice line is given by defining a negative PriceAmount, and thereby a negative InvoiceLine/LineExtensionAmount.

Note that amounts in the InvoiceLine/TaxTotal class also must be negative on a negative Invoice line.

3.2.1.1. Negative total line extension amount

LegalMonetaryTotal/LineExtensionAmount can also be negative as long as the PayableAmount is still positive. If an Invoice e.g. has two invoice lines:

Line 1: DKK 100.00 VAT Standard rated
Line 2: DKK -110.00 VAT Zero rated

Then the document total will look as in the example below after calculation of VAT

```xml
<cac:LegalMonetaryTotal>
  <cbc:LineExtensionAmount currencyID="DKK">-10.00</cbc:LineExtensionAmount>
  <cbc:TaxExclusiveAmount currencyID="DKK">25.00</cbc:TaxExclusiveAmount>
  <cbc:TaxInclusiveAmount currencyID="DKK">15.00</cbc:TaxInclusiveAmount>
  <cbc:PayableAmount currencyID="DKK">15.00</cbc:PayableAmount>
</cac:LegalMonetaryTotal>
```

3.3. Calculation Relevance

The amount total can sometimes be calculated by totaling all subtotals. However, some subtotals may be merely descriptive. Their purpose is to show how another subtotal is calculated. As such, these descriptive subtotals have no relevance to the total and cannot be included in the calculation of the amount total.

For example, the specification of charges and allowances at line level within the Price class may be used to permanently specify a charge for a given item. However, such values are only informative, as the charge should already be included in the calculated PriceAmount for the item in question. This means the amount is also included in the LineExtensionAmount for this line and should not be included when the amount totals are calculated in MonetaryTotal.

3.4. Calculation Sequence

Formally defining the total calculation method may be necessary if a document contains a series of interconnected taxes, allowances, or charges. For example, if an allowance is to be deducted before a charge is calculated.

To do this, the field SequenceNumeric\(^2\), in the different class instances, is assigned a serial number beginning with 1. This indicates that the calculation of the individual taxes, charges, and allowances is performed in this numeric order.

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\(^2\)Note! That in the TaxSubTotal class the field CalculationSequenceNumeric is used.
Please note that the above mentioned calculation sequence has not influence on the calculation of taxes. The tax liability of charges and allowances is always specified in the TaxCategory, whilst the calculation for taxes is defined by the TaxScheme class.

For further information on taxes, allowances, and charges, see the relevant guidelines: OIOUBL Guideline Tax (Ref. G27) and OIOUBL Guideline AllowanceCharge (Ref. G17).

### 3.5. Gross and Net amounts

In OIOUBL documents, prices (PriceAmount) are always specified as the net amount. The tax is calculated separately, and is added to the overall total (PayableAmount) as described below.

In the following description it is thus presumed that LineExtensionAmount for a given line is always exclusive of taxes.

### 3.6. LineExtensionAmount

It represents the total amount for the transaction line of the document, and is calculated by totaling the line subtotals. This can be expressed as the formula in Figure 2.

\[
\text{LineExtensionAmount} = \sum \text{LineExtensionAmount (at line level)}
\]

**Figure 2. Calculation of the document line total amount.**

The following rules apply to the line total:

- The amount is exclusive of taxes.
- The amount represents the value before adding or subtracting any relevant taxes, allowances, and charges at document level.
- The amount represents the value before adding or subtracting any relevant allowances or charges on line level (as these have already been included in the individual line totals).

#### 3.6.1. LineExtensionAmount in Reminder

In a Reminder document, it is possible to specify both a line amount to be credited as well as a line amount to be debited. This net amount must be considered when calculating the LineExtensionAmount in a Reminder, as shown by the formula in Figure 3.

\[
\text{LineExtensionAmount} = \sum \text{DebitLineAmount} - \sum \text{CreditLineAmount}
\]

**Figure 3. Calculation of line total in a Reminder document.**

The other rules for calculation of the line total are identical to those described above.

### 3.7. TaxExclusiveAmount

The TaxExclusiveAmount specifies the total amount of tax for a document. It is always specified in the field TaxAmount in the TaxTotal class on document level using the formula described in Figure 4.
TaxExclusiveAmount = \sum \text{TaxAmount (from TaxTotal classes on document level)}

Figure 4. Calculation of the document TaxExclusiveAmount.

The following rules apply to the total tax amount of the document:

- The amount can be both positive, negative or null.
- If taxes are specified in a different currency than the document currency, special rules apply. These are described in the OIOUBL Guideline Exchange Rates and Currency Codes (Ref. G18).
- **Note**: The use of TaxExclusiveAmount in OIOUBL is by mistake different from the use in UBL 2.0. In UBL 2.0 it is the VAT Basis, and in OIOUBL it is the VAT/tax total. The Danish definition is sustained in version 2.02, but suppliers of administrative systems should be aware of the difference and take it into account.

### 3.8. TaxInclusiveAmount

The TaxInclusiveAmount represents the sum of the total tax amount and the related taxable amount of the document. In practice, this will represent the overall document total unless a PrePaidAmount applies. The complete formula is given in Figure 5.

\[
\text{TaxInclusiveAmount} = \sum \text{TaxAmount (from TaxTotal classes on document level)} + \\
\sum \text{TaxableAmount (from TaxSubtotal classes on document level)} + \\
\sum \text{Amount (from AllowanceCharge classes on document level where ChargeIndicator = "true")} - \\
\sum \text{Amount (from AllowanceCharge classes on document level where ChargeIndicator = "false")}
\]

Figure 5. Calculation of TaxInclusiveAmount.

The following rules apply to the TaxInclusiveAmount of a document:

- The amount must not be zero or negative

### 3.9. AllowanceTotalAmount

AllowanceTotalAmount defines the total of all allowances in the document. It is calculated from the formula shown in Figure 6.

\[
\text{AllowanceTotalAmount} = \\
\sum \text{Amount (from AllowanceCharge classes on document level where ChargeIndicator = "false")}
\]

Figure 6. Calculation of the document AllowanceTotalAmount.

The following rules apply to the AllowanceTotalAmount of the document:

- The amount must not be negative
3.10. **ChargeTotalAmount**

*ChargeTotalAmount* defines the total of the charges in the document. It is calculated using the formula shown in Figure 7.

\[
\text{ChargeTotalAmount} = \sum \text{Amount (from AllowanceCharge classes on document level where ChargeIndicator = "true")}
\]

**Figure 7. Calculation of the document **ChargeTotalAmount**.**

The following rules apply to the *ChargeTotalAmount* of a document:

- The amount must not be negative

3.11. **PrepaidAmount**

*PrepaidAmount* defines any prepaid amount applicable to the transaction. It can be represented by the formula shown in Figure 8.

\[
\text{PrepaidAmount} = \sum \text{PaidAmount (from PrepaidPayment classes on document level)}
\]

**Figure 8. Calculation of a possible prepaid amount.**

The following rules apply to the *PrepaidAmount* of a document:

- The amount must not be negative

3.12. **PayableRoundingAmount**

*PayableRoundingAmount* defines any possible rounding amount for totals in a document. The formula is given in Figure 9.

\[
\text{PayableRoundingAmount} = \sum \text{RoundingAmount (from TaxTotal classes on document level)}
\]

**Figure 9. Calculation of the document **PayableRoundingAmount**.**

The following rules apply to the *PayableRoundingAmount* of a document:

- The amount can be positive or negative but not null.
3.13. **PayableAmount**

*PayableAmount* represents the total payable amount for a document. The formula for its calculation is given in Figure 10.

\[
\text{PayableAmount} = \\
\text{LineExtensionAmount (from LegalTotal classes on document level)} + \\
\text{TaxExclusiveAmount (from klassen LegalTotal classes on document level)} - \\
\text{AllowanceTotalAmount (from klassen LegalTotal classes on document level)} + \\
\text{ChargeTotalAmount (from klassen LegalTotal classes on document level)} - \\
\text{PrepaidAmount (from klassen LegalTotal classes on document level)} + \\
\text{PayableRoundingAmount (from klassen LegalTotal classes on document level)}
\]

**Figure 10. Calculation of the document PayableAmount.**

The following rules apply to the *PayableAmount* of a document:

- The amount must not be negative
- Special rules apply to the specification of alternative currency codes for the *PayableAmount*. This is described in the OIOUBL Guideline Exchange Rates and Currency Codes (Ref. G18).
4. Examples

Below an XML example showing the use the MonetaryTotal class.

4.1. The use of the MonetaryTotal class

An example showing the use of LegalMonetaryTotal in an Invoice document:

```xml
<cac:LegalMonetaryTotal>
   <cbc:LineExtensionAmount currencyID="DKK">5050.00</cbc:LineExtensionAmount>
   <cbc:TaxExclusiveAmount currencyID="DKK">1262.50</cbc:TaxExclusiveAmount>
   <cbc:TaxInclusiveAmount currencyID="DKK">6312.50</cbc:TaxInclusiveAmount>
   <cbc:PayableAmount currencyID="DKK">6312.50</cbc:PayableAmount>
</cac:LegalMonetaryTotal>
```
## 5. Terms and abbreviations

Listed below are the most important terms and abbreviations:

<table>
<thead>
<tr>
<th>Term:</th>
<th>Explanation:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Document level</strong></td>
<td>Elements at document level are found directly under the root element (the top element) in the XML structure. Elements at the document level apply to the whole document.</td>
</tr>
<tr>
<td><strong>Line level</strong></td>
<td>Elements at line level, unlike elements at the document level, only apply to a specific transaction line</td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td>A class is a collection of elements. For example, the Price class contains elements such as PriceAmount, BaseQuantity, etc.</td>
</tr>
<tr>
<td><strong>Element</strong></td>
<td>An element is an information entity in an XML structure. For example, the PriceAmount is the element containing the price in an invoice line.</td>
</tr>
<tr>
<td><strong>Attributes</strong></td>
<td>In an XML element, it is possible to specify a property as an attribute, e.g., the attribute unitCode in which the unit for a quantity may be specified, as in the example: <code>&lt;cbc:BaseQuantity unitCode=&quot;BO&quot;&gt;1&lt;/cbc:BaseQuantity&gt;</code></td>
</tr>
<tr>
<td><strong>Tax</strong></td>
<td>In OIOUBL taxes (afgifter) are defined as amounts that are paid to public authorities (such as VAT, taxes, environmental taxes, etc.) Taxes that are settled between commercial organizations are considered charges and allowances, and are defined in the AllowanceCharge class.</td>
</tr>
<tr>
<td><strong>TaxScheme</strong></td>
<td>An OIOUBL TaxScheme is equivalent to the Danish pligtkoder. Pligtkoder are used when a trading party is registered with SKAT, as a relationship is made between the pligtkode and their SE number. In OIOUBL documents that include taxes (such as an invoice) a separate amount total must be specified per TaxScheme (=pligtkode).</td>
</tr>
<tr>
<td><strong>TaxCategory</strong></td>
<td>A TaxCategory can be the values such as VAX, TAX, EXCISE, and also the Danish Duty codes such as 3096, &quot;Cigarer, cerutter og cigarillos&quot; (Cigars, cheroots, and cigarillos).</td>
</tr>
<tr>
<td><strong>TaxTypeCode</strong></td>
<td>Specifies whether a tax is taxable or not using a TaxSchemeCode (VAT, ZERORATED).</td>
</tr>
<tr>
<td><strong>TaxSchemeCode</strong></td>
<td>See TaxScheme</td>
</tr>
<tr>
<td><strong>Calculation formula</strong></td>
<td>The formula used to calculate a given tax based upon a taxable amount. This may be in the form of either a percentage or a fixed amount. For example, the calculation formula for VAT may either be 25% or 0% (zero-charged).</td>
</tr>
</tbody>
</table>