

Open Document Format for Office Applications (OpenDocument) v1.1

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Related Work:

This specification supersedes OASIS OpenDocument v1.0.

Declared XML Namespaces:

A list of XML namespaces declared by this specification is available in section 1.3.

Abstract:

This is the specification of the Open Document Format for Office Applications (OpenDocument) format, an open, XML-based file format for office applications, based on OpenOffice.org XML [OOo].

Status:

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1. Introduction

## Introduction

This document defines an XML schema for office applications and its semantics. The schema is suitable for office documents, including text documents, spreadsheets, charts and graphical documents like drawings or presentations, but is not restricted to these kinds of documents.

The schema provides for high-level information suitable for editing documents. It defines suitable XML structures for office documents and is friendly to transformations using XSLT or similar XML-based tools.

Chapter 1 contains the introduction to the OpenDocument format. The structure of documents that conform to the OpenDocument specification is explained in chapter 2. Chapter 3 described the meta information that can be contained in such documents. Chapters 4 and 5 describe their text and paragraph content. Text Fields are described in chapter 6, text indices in chapter 7.

Chapter 8 describes the table content of a document in OpenDocument format, chapter 9 its graphical content, chapter 10 its chart content, and chapter 11 its form content. Content that is common to all documents is described in chapter 12. The integration of SMIL animation markup into the OpenDocument schema is described in chapter 13. Chapter 14 explains style information content, chapter 15 specifies formatting properties that are can be used within styles. The data types used by the OpenDocument schema are described in chapter 16.

The OpenDocument format makes use of a package concept. These packages are described in chapter 17.

## Notation

Within this specification, the key words "shall", "shall not", "should", "should not" and "may" are to be interpreted as described in Annex H of [ISO/IEC Directives] if they appear in bold letters.

## Namespaces

Table 1 lists the namespaces that are defined by the OpenDocument format and their default prefixes. For more information about XML namespaces, please refer to the Namespaces in XML specification [xml-names].

Table 1: XML Namespaces defined by the OpenDocument schema

| Prefix | Description | Namespace |
| --- | --- | --- |
| office | For all common pieces of information that are not contained in another, more specific namespace. | urn:oasis:names:tc:opendocument:xmlns: office:1.0 |
| meta | For elements and attributes that describe meta information. | urn:oasis:names:tc:opendocument:xmlns: meta:1.0 |
| config | For elements and attributes that describe application specific settings. | urn:oasis:names:tc:opendocument:xmlns: config:1.0 |
| text | For elements and attributes that may occur within text documents and text parts of other document types, such as the contents of a spreadsheet cell. | urn:oasis:names:tc:opendocument:xmlns: text:1.0 |
| table | For elements and attributes that may occur within spreadsheets or within table definitions of a text document. | urn:oasis:names:tc:opendocument:xmlns: table:1.0 |
| drawing | For elements and attributes that describe graphic content. | urn:oasis:names:tc:opendocument:xmlns: drawing:1.0 |
| presentation | For elements and attributes that describe presentation content. | urn:oasis:names:tc:opendocument:xmlns: presentation:1.0 |
| dr3d | For elements and attributes that describe 3D graphic content. | urn:oasis:names:tc:opendocument:xmlns: dr3d:1.0 |
| anim | For elements and attributes that describe animation content. | urn:oasis:names:tc:opendocument:xmlns: animation:1.0 |
| chart | For elements and attributes that describe chart content. | urn:oasis:names:tc:opendocument:xmlns: chart:1.0 |
| form | For elements and attributes that describe forms and controls. | urn:oasis:names:tc:opendocument:xmlns: form:1.0 |
| script | For elements and attributes that represent scripts or events. | urn:oasis:names:tc:opendocument:xmlns: script:1.0 |
| style | For elements and attributes that describe the style and inheritance model used by the OpenDocument format as well as some common formatting attributes. | urn:oasis:names:tc:opendocument:xmlns: style:1.0 |
| number | For elements and attributes that describe data style information. | urn:oasis:names:tc:opendocument:xmlns: data style:1.0 |
| manifest | For elements and attribute contained in the package manifest. | urn:oasis:names:tc:opendocument:xmlns: manifest:1.0 |

Table 2 lists the namespaces that are defined by the OpenDocument format, but contain elements and attributes whose semantics are compatible to elements and attributes from other specifications.

Table 2: XML Namespaces defined by the OpenDocument schema that include elements and attributes that are compatible to elements and attributes of other standards.

| Prefix | Description | Namespace |
| --- | --- | --- |
| fo | For attributes that are compatible to attributes defined in [XSL]. | urn:oasis:names:tc:opendocument:xmlns: xsl-fo-compatible:1.0 |
| svg | For elements and attributes that are compatible to elements or attributes defined in [SVG]. | urn:oasis:names:tc:opendocument:xmlns: svg-compatible:1.0 |
| smil | For attributes that are compatible to attributes defined in [SMIL20]. | urn:oasis:names:tc:opendocument:xmlns: smil-compatible:1.0 |

Table 3 lists the namespaces that are imported into the OpenDocument format and their default prefixes.

Table 3: XML Namespaces used by the OpenDocument schema

| Prefix | Description | Namespace |
| --- | --- | --- |
| dc | The Dublin Core Namespace (see [DCMI]). | http://purl.org/dc/elements/1.1/ |
| xlink | The XLink namespace (see [XLink]). | http://www.w3.org/1999/xlink |
| math | MathML Namespace (see [MathML]) | http://www.w3.org/1998/Math/MathML |
| xforms | The XForms namespace (see [XForms]). | http://www.w3.org/2002/xforms |

## Relax-NG Schema

The normative XML Schema for the OpenDocument format is embedded within this specification. It can be obtained from the specification document by concatenating all schema fragments contained in chapters 1 to 16. All schema fragments have a gray background color and line numbers.

The schema language used within this specification is Relax-NG (see [RNG]). The attribute default value feature specified in [RNG-Compat] is used to provide attribute default values.

The schema provided in this specification permits arbitrary content within meta information elements and formatting properties elements as described in section 1.5. Appendix A contains a schema that restricts the content within these elements to the attributes and elements defined in this specification.

Prefix for the normative Relax-NG schema:

<?xml version="1.0" encoding="UTF-8"?>

<!--

OASIS OpenDocument v1.1

OASIS Standard, 1 Feb 2007

Relax-NG Schema

© 2002-2007 OASIS Open

© 1999-2007 Sun Microsystems, Inc.

-->

<grammar

xmlns="http://relaxng.org/ns/structure/1.0"

xmlns:a="http://relaxng.org/ns/compatibility/annotations/1.0"

datatypeLibrary="http://www.w3.org/2001/XMLSchema-datatypes"

xmlns:office="urn:oasis:names:tc:opendocument:xmlns:office:1.0"

xmlns:meta="urn:oasis:names:tc:opendocument:xmlns:meta:1.0"

xmlns:config="urn:oasis:names:tc:opendocument:xmlns:config:1.0"

xmlns:text="urn:oasis:names:tc:opendocument:xmlns:text:1.0"

xmlns:table="urn:oasis:names:tc:opendocument:xmlns:table:1.0"

xmlns:draw="urn:oasis:names:tc:opendocument:xmlns:drawing:1.0"

xmlns:presentation="urn:oasis:names:tc:opendocument:xmlns:presentation:1.0"

xmlns:dr3d="urn:oasis:names:tc:opendocument:xmlns:dr3d:1.0"

xmlns:chart="urn:oasis:names:tc:opendocument:xmlns:chart:1.0"

xmlns:form="urn:oasis:names:tc:opendocument:xmlns:form:1.0"

xmlns:script="urn:oasis:names:tc:opendocument:xmlns:script:1.0"

xmlns:style="urn:oasis:names:tc:opendocument:xmlns:style:1.0"

xmlns:number="urn:oasis:names:tc:opendocument:xmlns:datastyle:1.0"

xmlns:anim="urn:oasis:names:tc:opendocument:xmlns:animation:1.0"

xmlns:dc="http://purl.org/dc/elements/1.1/"

xmlns:xlink="http://www.w3.org/1999/xlink"

xmlns:math="http://www.w3.org/1998/Math/MathML"

xmlns:xforms="http://www.w3.org/2002/xforms"

xmlns:fo="urn:oasis:names:tc:opendocument:xmlns:xsl-fo-compatible:1.0"

xmlns:svg="urn:oasis:names:tc:opendocument:xmlns:svg-compatible:1.0"

xmlns:smil="urn:oasis:names:tc:opendocument:xmlns:smil-compatible:1.0"

>

## Document Processing and Conformance

Documents that conform to the OpenDocument specification may contain elements and attributes not specified within the OpenDocument schema. Such elements and attributes must not be part of a namespace that is defined within this specification and are called foreign elements and attributes.

Conforming applications either shall read documents that are valid against the OpenDocument schema if all foreign elements and attributes are removed before validation takes place, or shall write documents that are valid against the OpenDocument schema if all foreign elements and attributes are removed before validation takes place.

Conforming applications that read and write documents may preserve foreign elements and attributes.

In addition to this, conforming applications should preserve meta information and the content of styles. This means:

* The various <style:\*-properties> elements (see section 15) may have arbitrary attributes attached and may have arbitrary element content. All attributes attached to these elements and elements contained within these elements should be preserved (see section 15.1.3);
* elements contained within the <office:meta> element may have arbitrary element content and should be preserved (see section 2.2.1).

Foreign elements may have an office:process-content attribute attached that has the value true or false. If the attribute's value is true, or if the attribute does not exist, the element's content should be processed by conforming applications. Otherwise conforming applications should not process the element's content, but may only preserve its content. If the element's content should be processed, the document itself shall be valid against the OpenDocument schema if the unknown element is replaced with its content only.

Conforming applications shall read documents containing processing instructions and should preserve them.

There are no rules regarding the elements and attributes that actually have to be supported by conforming applications, except that applications should not use foreign elements and attributes for features defined in the OpenDocument schema. See also appendix D.

<define name="office-process-content">

<optional>

<attribute name="office:process-content" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## White-Space Processing and EOL Handling

In conformance with the **W3C** XML specification [XML1.0], optional white-space characters that are contained in elements that have element content (in other words that must contain elements only but not text) are ignored. This applies to the following white-space and end-of-line (**EOL**) [UNICODE] characters:

* HORIZONTAL TABULATION (0x0009)
* LINE FEED (0x000A)
* CARRIAGE RETURN (0x000D)
* SPACE (0x0020)

For any other element, white-spaces are preserved by default. Unless otherwise stated, there is no special processing for any of the four white-space characters. For some elements, different white-space processing may take place, for example the paragraph element.

The XML specification also requires that any of the four white-space characters that is contained in an attribute value is normalized to a SPACE character.

One of the following characters may be used to represent line ends:

* LINE FEED
* CARRIAGE RETURN
* The sequence of the characters CARRIAGE RETURN and LINE FEED

Conforming to the XML specification, all the possible line ends are normalized to a single LINE FEED character.

As a consequence of the white-space and EOL processing rules, any CARRIAGE RETURN characters that are contained either in the text content of an element or in an attribute value must be encoded by the character entity &#x0D;. The same applies to the HORIZONTAL TABULATION and LINE FEED characters if they are contained in an attribute value.

## MIME Types and File Name Extensions

Appendix C contains a list of MIME types and file name extensions to be used for office documents that conform to this specification and that are contained in a package (see section 2.1). This MIME types and extensions either have been registered following the procedures described in [RFC2048], or a registration is in progress.

Office documents that conform to this specification but are not contained in a package should use the MIME type text/xml.

Only MIME types and extensions that have been registered according to [RFC2048] should used for office documents that conform to this specification. The MIME types and extensions listed in appendix C should be used where appropriate.

1. Document Structure

This chapter introduces the structure of the OpenDocument format. The chapter contains the following sections:

* Document Roots
* Document Metadata
* Body Element and Document Types
* Application Settings
* Scripts
* Font Face Declarations
* Styles
* Page Styles and Layout

In the OpenDocument format, each structural component is represented by an **element**, with associated **attributes**. The structure of a document in OpenDocument format applies to all document types. There is no difference between a text document, a spreadsheet or a drawing, apart from the content. Also, all document types may contain different styles. Document content that is common to all document types can be exchanged from one type of document to another.

## Document Roots

A **document root element** is the primary element of a document in OpenDocument format. It contains the entire document. All types of documents, for example, text documents, spreadsheets, and drawing documents use the same types of document root elements.

The OpenDocument format supports the following two ways of document representation:

* As a single XML document.
* As a collection of several subdocuments within a package (see section 17), each of which stores part of the complete document. Each subdocument has a different document root and stores a particular aspect of the XML document. For example, one subdocument contains the style information and another subdocument contains the content of the document. All types of documents, for example, text and spreadsheet documents, use the same document and subdocuments definitions.

There are four types of subdocuments, each with different root elements. Additionally, the single XML document has its own root element, for a total of five different supported root elements. The root elements are summarized in the following table:

| Root Element | Subdocument Content | Subdoc. Name in Package |
| --- | --- | --- |
| <office:document> | Complete office document in a single XML document. | n/a |
| <office:document-content> | Document content and automatic styles used in the content. | content.xml |
| <office:document-styles> | Styles used in the document content and automatic styles used in the styles themselves. | styles.xml |
| <office:document-meta> | Document meta information, such as the author or the time of the last save action. | meta.xml |
| <office:document-settings> | Application-specific settings, such as the window size or printer information. | settings.xml |

The definitions of the root elements described in the table above are analogous to the definition of <office:document>, except that the child element specification is suitably restricted.

<start>

<choice>

<ref name="office-document"/>

<ref name="office-document-content"/>

<ref name="office-document-styles"/>

<ref name="office-document-meta"/>

<ref name="office-document-settings"/>

</choice>

</start>

### Document Root Element Content Models

The content models of the five root elements is summarized in the following table. Note that <office:document> may contain all supported top-level elements. None of the four subdocument root elements contain the complete data, but four combined do.

| Root Element | meta­data | app. sett. | script | font decls | style | auto style | mast style | body |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| <office:document> |  |  |  |  |  |  |  |  |
| <office:document-content> |  |  |  |  |  |  |  |  |
| <office:document-styles> |  |  |  |  |  |  |  |  |
| <office:document-meta> |  |  |  |  |  |  |  |  |
| <office:document-settings> |  |  |  |  |  |  |  |  |

The <office:document> root contains a complete document:

<define name="office-document">

<element name="office:document">

<ref name="office-document-attrs"/>

<ref name="office-document-common-attrs"/>

<ref name="office-meta"/>

<ref name="office-settings"/>

<ref name="office-scripts"/>

<ref name="office-font-face-decls"/>

<ref name="office-styles"/>

<ref name="office-automatic-styles"/>

<ref name="office-master-styles"/>

<ref name="office-body"/>

</element>

</define>

The <office:document-content> root contains only the document content, along with the automatic styles needed for the document content:

<define name="office-document-content">

<element name="office:document-content">

<ref name="office-document-common-attrs"/>

<ref name="office-scripts"/>

<ref name="office-font-face-decls"/>

<ref name="office-automatic-styles"/>

<ref name="office-body"/>

</element>

</define>

The <office:document-styles> root contains all named styles of a document, along with the automatic styles needed for the named styles:

<define name="office-document-styles">

<element name="office:document-styles">

<ref name="office-document-common-attrs"/>

<ref name="office-font-face-decls"/>

<ref name="office-styles"/>

<ref name="office-automatic-styles"/>

<ref name="office-master-styles"/>

</element>

</define>

The <office:document-meta> root contains the meta information about a document.

<define name="office-document-meta">

<element name="office:document-meta">

<ref name="office-document-common-attrs"/>

<ref name="office-meta"/>

</element>

</define>

The <office:document-settings> root contains application specific settings to be applied when processing this document.

<define name="office-document-settings">

<element name="office:document-settings">

<ref name="office-document-common-attrs"/>

<ref name="office-settings"/>

</element>

</define>

### Document Root Attributes

#### Version

All root elements take an office:version attribute, which indicates which version of this specification it complies with. The version number is in the format revision.version. If the file has a version known to an XML processor, it may validate the document. Otherwise, it is optional to validate the document, but the document must be well formed.

<define name="office-document-common-attrs" combine="interleave">

<optional>

<attribute name="office:version">

<ref name="string"/>

</attribute>

</optional>

</define>

#### MIME Type

The <office:document> element takes an office:mimetype attribute, which indicates the type of document (text, spreadsheet etc.). This attribute is especially important for flat XML files, where this is the only way the type of document can be detected (in a package, the MIME type is also present in a separate file, see section 17.4). Its values are the MIME types that are used for the packaged variant of office documents (see section 1.7).

<define name="office-document-attrs" combine="interleave">

<attribute name="office:mimetype">

<ref name="string"/>

</attribute>

</define>

## Document Metadata

Metadata is general information about a document. In the OpenDocument format, all of the metadata elements are contained in an <office:meta> element, usually located at start of the document. Metadata elements may be omitted or occur multiple times. It is application-specific how to update multiple instances of the same elements.

<define name="office-meta">

<optional>

<element name="office:meta">

<ref name="office-meta-content"/>

</element>

</optional>

</define>

<define name="office-meta-content">

<ref name="anyElements"/>

</define>

<define name="office-meta-content-strict">

<zeroOrMore>

<ref name="office-meta-data"/>

</zeroOrMore>

</define>

### Pre-Defined vs. Custom Metadata

In the OpenDocument schema the metadata is comprised of pre-defined metadata elements, user defined metadata, as well as custom metadata elements. The pre-defined metadata elements have defined semantics. They should be processed and updated by editing applications. They can be referenced from within the document through the use of suitable text fields.

User-defined metadata is a more generic mechanism which specifies a triplet of name, type, and value. Supporting applications can present these value to the user, making use of the supplied data type. The user-defined metadata can be referenced from within the document through the use of suitable text fields.

Custom metadata are arbitrary elements inside <office:meta>. Since their semantics is not defined in this specification, conforming applications in general cannot process or display this data. Applications should preserve this data when editing the document.

### Sample Metadata

Example: Sample metadata of a document in **OpenDocument** format

<office:meta>

<dc:title>Title of the document</dc:title>

<dc:description>Description/Comment for the document</dc:description>

<meta:initial-creator>User Name</meta:initial-creator>

<meta:creation-date>1999-10-18T12:34:56</meta:creation-date>

<dc:creator>User Name</dc:creator>

<dc:date>1999-10-19T15:16:17</dc:date>

<meta:printed-by>User Name</meta:printed-by>

<meta:print-date>1999-10-20T16:17:18</meta:print-date>

<dc:subject>Description of the document</dc:subject>

<meta:editing-duration>PT5H10M10S</meta:editing-duration>

<meta:keyword>First keyword</meta:keyword>

<meta:keyword>Second keyword</meta:keyword>

<meta:keyword>Third keyword</meta:keyword>

<meta:template xlink:type="simple"

xlink:href="file:///c|/office52/share/template/german/finance/budget.vor"

xlink:title="Template name"

meta:date="1999-10-15T10:11:12" />

<meta:auto-reload

xlink:type="simple"

xlink:href="file:///..."

meta:delay="P60S" />

<dc:language>de-DE</dc:language>

<meta:user-defined meta:name="Field 1"

meta:value-type="string">Value 1</meta:user-defined>

<meta:user-defined meta:name="Field 2"

meta:value-type="float">1.234</meta:user-defined>

</office:meta>

## Body Element and Document Types

The document body contains an element to indicate which type of content this document contains. Currently supported document types are:

* text documents
* drawing documents
* presentation documents
* spreadsheet documents
* chart documents
* image documents

All document types share the same content elements, but different document types place different restrictions on which elements may occur, and in what combinations. The document content is typically framed by a prelude and epilogue, which contain additional information for a specific type of document, like form data or variable declarations.

<define name="office-body">

<element name="office:body">

<ref name="office-body-content"/>

</element>

</define>

### Text Documents

The content of text documents mainly consists of a sequence containing any number of paragraphs, tables, indices, text frames, text sections, and graphical elements. Additionally, a text document may contain forms, change tracking information and variable declarations. Each of these is defined in the document prelude, and may be referenced from the document content.

<define name="office-body-content" combine="choice">

<element name="office:text">

<ref name="office-text-attlist"/>

<ref name="office-text-content-prelude"/>

<zeroOrMore>

<ref name="office-text-content-main"/>

</zeroOrMore>

<ref name="office-text-content-epilogue"/>

</element>

</define>

#### Text Document Content Model

The text document prelude contains the document's form data, change tracking information, and variable declarations. To allow office applications to implement functionality that usually is available in spreadsheets for text documents, it may also contain elements that implement enhanced table features. See also section 2.3.4.

<define name="office-text-content-prelude">

<ref name="office-forms"/>

<ref name="text-tracked-changes"/>

<ref name="text-decls"/>

<ref name="table-decls"/>

</define>

The main document content contains any sequence of text content elements, which includes paragraphs (and headings), text sections (and indices), tables, and graphical shapes. As an alternative, a text document may contain of a single page sequence.

It is not required that a text document contains a paragraph. A text document may consist of a sequence frames only.

<define name="office-text-content-main">

<choice>

<zeroOrMore>

<ref name="text-content"/>

</zeroOrMore>

<group>

<ref name="text-page-sequence"/>

<zeroOrMore>

<choice>

<ref name="draw-a"/>

<ref name="shape"/>

</choice>

</zeroOrMore>

</group>

</choice>

</define>

<define name="text-content">

<choice>

<ref name="text-h"/>

<ref name="text-p"/>

<ref name="text-list"/>

<ref name="text-numbered-paragraph"/>

<ref name="table-table"/>

<ref name="draw-a"/>

<ref name="text-section"/>

<ref name="text-soft-page-break"/>

<ref name="text-table-of-content"/>

<ref name="text-illustration-index"/>

<ref name="text-table-index"/>

<ref name="text-object-index"/>

<ref name="text-user-index"/>

<ref name="text-alphabetical-index"/>

<ref name="text-bibliography"/>

<ref name="shape"/>

<ref name="change-marks"/>

</choice>

</define>

There are no text documents specific epilogue elements, but the epilogue may contain elements that implement enhanced table features. See also section 2.3.4.

<define name="office-text-content-epilogue">

<ref name="table-functions"/>

</define>

#### Global Text Documents

There is a common use case for large documents to be edited in separate entities, such that there is a 'global' document, containing several linked constituent subdocuments. This can be implemented by using linked text sections (see section 4.4). To facilitate an editing application adapting the user interface to better support the notion of 'global' document with constituent parts (as opposed to a document with arbitrary linked content), the text:global flag can be used. If set to true, it informs applications that linked sections in this document have part-of semantics. The actual XML representation of the sections does not change.

<define name="office-text-attlist" combine="interleave">

<optional>

<attribute name="text:global" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Use Soft Page Breaks

The text:use-soft-page-breaks attribute specifies whether the document contains soft page breaks.

A soft page break is a page break that a has been included by a page oriented processor at a position where the document itself does not include a page break (e.g. by using the fo:break-before and fo:break-after formatting properties described in section 15.5.2).

Soft page breaks are specified by the <text:soft-page-break> elements described in sections 4.7 and 5.1.1:Soft Page breaks.

The use of the <text:soft-page-break> elements is always optional. An application generating the format may include the element if it has computed a paginated layout. A consuming application may handle the element while computing the layout, but it shall not depend on its existence. Soft page breaks are only supported within text documents.

A generating application that stores soft page breaks shall indicate this by setting the text:use-page-breaks attribute to true. A generating application that does not store soft page breaks shall indicate that by omitting this attribute, or by setting it to false.

An application that does not support pagination and soft page-breaks, that modifies an OpenDocument file, which includes soft page-breaks, shall at least set the text:use-page-breaks attribute to false (or remove it). It should also remove the text:soft-page-break elements from the document but is not required to do so.

An application that computes a paginated layout of a document should provide a facility to turn on export of soft page breaks for the purposes of consistent page breaks and for proper conversion to digital talking book formats (such as [DAISY]).

For <text:soft-page-break> elements that appear within table rows, the maximum number of <text:soft-page-break> elements that appear within the single table cells determines the number of page breaks that appear within the table row. The <text:soft-page-break> elements contained in each cell determine the positions where these page breaks appear within the cell content.

Similarly, <text:soft-page-break> elements that appear within text boxes and other content displayed outside the text flow, do not start a new page, but only indicate where the text-box's content breaks between two pages.

<define name="office-text-attlist" combine="interleave">

<optional>

<attribute name="text:use-soft-page-breaks" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Drawing Documents

The content of drawing document consists of a sequence of draw pages.

<define name="office-body-content" combine="choice">

<element name="office:drawing">

<ref name="office-drawing-attlist"/>

<ref name="office-drawing-content-prelude"/>

<ref name="office-drawing-content-main"/>

<ref name="office-drawing-content-epilogue"/>

</element>

</define>

<define name="office-drawing-attlist">

<empty/>

</define>

#### Drawing Document Content Model

The drawing document prelude may contain text declarations only. To allow office applications to implement functionality that usually is available in spreadsheets for drawing documents, it may also contain elements that implement enhanced table features. See also section 2.3.4.

<define name="office-drawing-content-prelude">

<ref name="text-decls"/>

<ref name="table-decls"/>

</define>

The main document content contains a sequence of draw pages.

<define name="office-drawing-content-main">

<zeroOrMore>

<ref name="draw-page"/>

</zeroOrMore>

</define>

There are no drawing documents specific epilogue elements, but the epilogue may contain elements that implement enhanced table features. See also section 2.3.4.

<define name="office-drawing-content-epilogue">

<ref name="table-functions"/>

</define>

### Presentation Documents

The content of presentation document consists of a sequence of draw pages.

<define name="office-body-content" combine="choice">

<element name="office:presentation">

<ref name="office-presentation-attlist"/>

<ref name="office-presentation-content-prelude"/>

<ref name="office-presentation-content-main"/>

<ref name="office-presentation-content-epilogue"/>

</element>

</define>

<define name="office-presentation-attlist">

<empty/>

</define>

#### Presentation Document Content Model

The presentation document prelude equals the one of a drawing document, but may contain some additional declarations. See also section 2.3.2.

<define name="office-presentation-content-prelude">

<ref name="text-decls"/>

<ref name="table-decls"/>

<ref name="presentation-decls"/>

</define>

The main document content contains a sequence of draw pages.

<define name="office-presentation-content-main">

<zeroOrMore>

<ref name="draw-page"/>

</zeroOrMore>

</define>

The epilogue of presentation documents may contain presentation settings. Additionally, it may contain elements that implement enhanced table features. See also section 2.3.4.

<define name="office-presentation-content-epilogue">

<ref name="presentation-settings"/>

<ref name="table-functions"/>

</define>

### Spreadsheet Documents

The content of spreadsheet documents mainly consists of a sequence of tables. Additionally, a spreadsheet document may contain forms, change tracking information and various kinds of declarations that simplify the usage of spreadsheet tables and their analysis. Each of these are contained in either the document prelude, or the document epilogue.

<define name="office-body-content" combine="choice">

<element name="office:spreadsheet">

<ref name="office-spreadsheet-attlist"/>

<ref name="office-spreadsheet-content-prelude"/>

<ref name="office-spreadsheet-content-main"/>

<ref name="office-spreadsheet-content-epilogue"/>

</element>

</define>

#### Spreadsheet Document Content Model

The spreadsheet document prelude contains the document's form data, change tracking information, calculation setting for formulas, validation rules for cell content and declarations for label ranges.

<define name="office-spreadsheet-content-prelude">

<optional>

<ref name="table-tracked-changes"/>

</optional>

<ref name="text-decls"/>

<ref name="table-decls"/>

</define>

<define name="table-decls">

<optional>

<ref name="table-calculation-settings"/>

</optional>

<optional>

<ref name="table-content-validations"/>

</optional>

<optional>

<ref name="table-label-ranges"/>

</optional>

</define>

The main document is a list of tables.

<define name="office-spreadsheet-content-main">

<zeroOrMore>

<ref name="table-table"/>

</zeroOrMore>

</define>

The epilogue of spreadsheet documents contains declarations for named expressions, database ranges, data pilot tables, consolidation operations and DDE links.

<define name="office-spreadsheet-content-epilogue">

<ref name="table-functions"/>

</define>

<define name="table-functions">

<optional>

<ref name="table-named-expressions"/>

</optional>

<optional>

<ref name="table-database-ranges"/>

</optional>

<optional>

<ref name="table-data-pilot-tables"/>

</optional>

<optional>

<ref name="table-consolidation"/>

</optional>

<optional>

<ref name="table-dde-links"/>

</optional>

</define>

### Chart Documents

The content of chart documents mainly consists of a chart element.

<define name="office-body-content" combine="choice">

<element name="office:chart">

<ref name="office-chart-attlist"/>

<ref name="office-chart-content-prelude"/>

<ref name="office-chart-content-main"/>

<ref name="office-chart-content-epilogue"/>

</element>

</define>

<define name="office-chart-attlist">

<empty/>

</define>

#### Chart Document Content Model

To allow office applications to implement functionality that usually is available in spreadsheets for the table that may be contained in a chart, the chart document prelude may contain elements that implement enhanced table features. See also section 2.3.4.

<define name="office-chart-content-prelude">

<ref name="text-decls"/>

<ref name="table-decls"/>

</define>

The main document is a chart element only.

<define name="office-chart-content-main">

<ref name="chart-chart"/>

</define>

There are no chart documents specific epilogue elements, but the epilogue may contain elements that implement enhanced table features. See also section 2.3.4.

<define name="office-chart-content-epilogue">

<ref name="table-functions"/>

</define>

### Image Documents

The content of an image document is a frame element only. The frame element must contain a single image element.

<define name="office-body-content" combine="choice">

<element name="office:image">

<ref name="office-image-attlist"/>

<ref name="office-image-content-prelude"/>

<ref name="office-image-content-main"/>

<ref name="office-image-content-epilogue"/>

</element>

</define>

<define name="office-image-attlist">

<empty/>

</define>

#### Image Document Content Model

The image document prelude is empty.

<define name="office-image-content-prelude">

<empty/>

</define>

The main document content contains a frame only.

<define name="office-image-content-main">

<ref name="draw-frame"/>

</define>

There are no image documents specific epilogue elements.

<define name="office-image-content-epilogue">

<empty/>

</define>

## Application Settings

Application settings are contained in a <office:settings> element.

<define name="office-settings">

<optional>

<element name="office:settings">

<oneOrMore>

<ref name="config-config-item-set"/>

</oneOrMore>

</element>

</optional>

</define>

The settings for office applications may be divided into several categories each represented by a <config:config-item-set> element. For instance the following two categories may exist:

* Document settings, for example default printer.
* View settings, for example zoom level.

### Sequence of Settings

The <config:config-item-set> element is a container element for all types of setting elements. The settings can be contained in the element is any order.

<define name="config-config-item-set">

<element name="config:config-item-set">

<ref name="config-config-item-set-attlist"/>

<ref name="config-items"/>

</element>

</define>

<define name="config-items">

<oneOrMore>

<choice>

<ref name="config-config-item"/>

<ref name="config-config-item-set"/>

<ref name="config-config-item-map-named"/>

<ref name="config-config-item-map-indexed"/>

</choice>

</oneOrMore>

</define>

#### Config Name

The config:name attribute identifies the name of the setting container. For top level <config:config-item-set> elements, that are elements that are direct children of the <office:settings> element, the name should be preceded by a namespace prefix that identifies the application the settings belong to.

<define name="config-config-item-set-attlist" combine="interleave">

<attribute name="config:name">

<ref name="string"/>

</attribute>

</define>

Example:

<office:settings>

<config:config-item-set xmlns:ooo="http://www.openoffice.org/...";

config:name="ooo:view-settings">

<config:config-item config:name="ViewAreaTop"

config:type="int">0</config:config-item>

</config:config-item-set>

</office:settings>

### Base Settings

The <config:config-item> element contains all base settings. The value of the setting is stored in the element.

<define name="config-config-item">

<element name="config:config-item">

<ref name="config-config-item-attlist"/>

<text/>

</element>

</define>

#### Config Name

The config:name attribute identifies the name of the setting.

<define name="config-config-item-attlist" combine="interleave">

<attribute name="config:name">

<ref name="string"/>

</attribute>

</define>

#### Config Type

The config:type attribute identifies the data type of setting.

<define name="config-config-item-attlist" combine="interleave">

<attribute name="config:type">

<choice>

<value>boolean</value>

<value>short</value>

<value>int</value>

<value>long</value>

<value>double</value>

<value>string</value>

<value>datetime</value>

<value>base64Binary</value>

</choice>

</attribute>

</define>

### Index Access of Sequences

The <config:config-item-map-indexed> element is a container element for sequences. The order specifies the index of the elements

<define name="config-config-item-map-indexed">

<element name="config:config-item-map-indexed">

<ref name="config-config-item-map-indexed-attlist"/>

<oneOrMore>

<ref name="config-config-item-map-entry"/>

</oneOrMore>

</element>

</define>

#### Config Name

The config:name attribute identifies the name of the setting sequence.

<define name="config-config-item-map-indexed-attlist" combine="interleave">

<attribute name="config:name">

<ref name="string"/>

</attribute>

</define>

### Map Entry

The <config:config-item-map-entry> element represents an entry in an indexed or named settings sequence. It is a container element for all types of setting elements.

<define name="config-config-item-map-entry">

<element name="config:config-item-map-entry">

<ref name="config-config-item-map-entry-attlist"/>

<ref name="config-items"/>

</element>

</define>

#### Config Name

The config:name attribute identifies the name of the setting sequence.

<define name="config-config-item-map-entry-attlist" combine="interleave">

<optional>

<attribute name="config:name">

<ref name="string"/>

</attribute>

</optional>

</define>

### Name Access of Sequences

The <config:config-item-map-named> element is a container element for sequences, where each setting in the sequence is identified by its name.

<define name="config-config-item-map-named">

<element name="config:config-item-map-named">

<ref name="config-config-item-map-named-attlist"/>

<oneOrMore>

<ref name="config-config-item-map-entry"/>

</oneOrMore>

</element>

</define>

#### Config Name

The config:name attribute identifies the name of the setting sequence.

<define name="config-config-item-map-named-attlist" combine="interleave">

<attribute name="config:name">

<ref name="string"/>

</attribute>

</define>

### Cursor Position Setting

A common view setting for editing applications is the position where the text cursor was while saving the document. For WYSIWYG applications, this usually will be a position within a paragraph only. For applications that provide an XML based view of the document, the cursor position could be also between arbitrary elements, or even within tags.

To represent a text cursor position within a document, a processing instruction with PITarget opendocument (see §2.6 of [XML1.0]) should be used. The name of the cursor position processing instruction, cursor-position, shall follow the PITarget opendocument. The processing instruction may have arbitrary application specific attributes, for instance to connect the cursor position with a certain view of the document, where the views themselves are specified as application specific settings. The syntax for these attributes shall be the same as for attributes within XML start tags.

Where a text cursor position is not sufficient to recreate a document view, applications may use arbitrary document specific settings in addition to the cursor position processing instruction. They may also use arbitrary document specific settings if the cursor position is not a text cursor position, but for instance a selection of drawing objects.

Example: cursor position processing instruction

<text:p>This is<?opendocument cursor-position view-id="view1"?> an example.</text:p>

## Scripts

A document may contain several scripts in different scripting languages. Each script is represented by a <office:script> element. All these script elements are contained in a single <office:scripts> element.

Scripts do not imply a scripting language or an object model. A script can for instance operate on the Document Object Model (DOM) composed from the XML representation of a document in OpenDocument format (see [DOM2]), or on an application specific API.

Scripts cannot modify a document while the document is loading. However, some events are called immediately after the document is loaded.

In addition to <office:script> elements, the <office:scripts> element may also contain an <office:event-listeners> element which contains the events assigned to the document itself. Examples for these are events called when the document is opened or closed. See section 12.4 for more information on the <office:event-listeners> element.

<define name="office-scripts">

<optional>

<element name="office:scripts">

<zeroOrMore>

<ref name="office-script"/>

</zeroOrMore>

<optional>

<ref name="office-event-listeners"/>

</optional>

</element>

</optional>

</define>

### Script

The <office:script> element contains script language specific content. In most situations, the element contains the source code of the script, but it may also contain a compiled version of the script or a link to some external script code.

<define name="office-script">

<element name="office:script">

<ref name="office-script-attlist"/>

<mixed>

<ref name="anyElements"/>

</mixed>

</element>

</define>

#### Script Language

The attribute script:language specifies the language of the script by its name. Since script language names are application specific, the name should be preceded by a namespace prefix.

<define name="office-script-attlist">

<attribute name="script:language">

<ref name="string"/>

</attribute>

</define>

## Font Face Declarations

A document in OpenDocument format may contain font face declarations. A font face declaration provides information about the fonts used by the author of a document, so that these fonts or fonts that are very close to these fonts may be located on other systems. See section 14.6 for details.

<define name="office-font-face-decls">

<optional>

<element name="office:font-face-decls">

<zeroOrMore>

<ref name="style-font-face"/>

</zeroOrMore>

</element>

</optional>

</define>

## Styles

The OpenDocument format supports the following types of styles:

* **Common styles**  
  Most office applications support styles within their user interface. Within this specification, the XML representations of such styles are referred to as styles. When a differentiation from the other types of styles is required, they are referred to as common styles. The term *common* indicates that this is the type of style that an office application user considers to be a style.
* **Automatic styles**  
  An automatic style contains formatting properties that, in the user interface view of a document, are assigned to an object such as a paragraph. The term *automatic* indicates that the style is generated automatically. In other words, formatting properties that are immediately assigned to a specific object are represented by an automatic style. This way, a separation of content and layout is achieved.
* **Master styles**  
  A master style is a common style that contains formatting information and additional content that is displayed with the document content when the style is applied. An example of a master style are master pages. Master pages can be used in graphical applications. In this case, the additional content is any drawing shapes that are displayed as the background of the draw page. Master pages can also be used in text documents. In this case, the additional content is the headers and footers. Please note that the content that is contained within master styles is additional content that influences the representation of a document but does not change the content of a document.

As far as the office application user is concerned, all types of styles are part of the document. They represent the output device-independent layout and formatting information that the author of a document has used to create or edit the document. The assumption is that the author of the document wants this formatting and layout information to be preserved when the document is reloaded or displayed on any device, because this is common practice for documents created by word processors.

This type of style information differs from [CSS2] or [XSLT] style sheets that are used to display a document. An additional style sheet for CSS, XSLT, and so on, is required to display a document in OpenDocument format on a certain device. This style sheet must take into account the styles in the document as well as the requirements and capabilities of the output device. The ideal case is that this style sheet depends on the output device only.

See section 14 for more information on styles.

### Location of Styles

Common and automatic styles have the same XML representation, but they are contained within two distinct container elements, as follows:

* <office:styles> for common styles
* <office:automatic-styles> for automatic styles
* Master styles are contained within a container element of its own:
* <office:master-styles>

<define name="office-styles">

<optional>

<element name="office:styles">

<interleave>

<ref name="styles"/>

<zeroOrMore>

<ref name="style-default-style"/>

</zeroOrMore>

<optional>

<ref name="text-outline-style"/>

</optional>

<zeroOrMore>

<ref name="text-notes-configuration"/>

</zeroOrMore>

<optional>

<ref name="text-bibliography-configuration"/>

</optional>

<optional>

<ref name="text-linenumbering-configuration"/>

</optional>

<zeroOrMore>

<ref name="draw-gradient"/>

</zeroOrMore>

<zeroOrMore>

<ref name="svg-linearGradient"/>

</zeroOrMore>

<zeroOrMore>

<ref name="svg-radialGradient"/>

</zeroOrMore>

<zeroOrMore>

<ref name="draw-hatch"/>

</zeroOrMore>

<zeroOrMore>

<ref name="draw-fill-image"/>

</zeroOrMore>

<zeroOrMore>

<ref name="draw-marker"/>

</zeroOrMore>

<zeroOrMore>

<ref name="draw-stroke-dash"/>

</zeroOrMore>

<zeroOrMore>

<ref name="draw-opacity"/>

</zeroOrMore>

<zeroOrMore>

<ref name="style-presentation-page-layout"/>

</zeroOrMore>

</interleave>

</element>

</optional>

</define>

<define name="office-automatic-styles">

<optional>

<element name="office:automatic-styles">

<interleave>

<ref name="styles"/>

<zeroOrMore>

<ref name="style-page-layout"/>

</zeroOrMore>

</interleave>

</element>

</optional>

</define>

<define name="office-master-styles">

<optional>

<element name="office:master-styles">

<interleave>

<zeroOrMore>

<ref name="style-master-page"/>

</zeroOrMore>

<optional>

<ref name="style-handout-master"/>

</optional>

<optional>

<ref name="draw-layer-set"/>

</optional>

</interleave>

</element>

</optional>

</define>

<define name="styles">

<interleave>

<zeroOrMore>

<ref name="style-style"/>

</zeroOrMore>

<zeroOrMore>

<ref name="text-list-style"/>

</zeroOrMore>

<zeroOrMore>

<ref name="number-number-style"/>

</zeroOrMore>

<zeroOrMore>

<ref name="number-currency-style"/>

</zeroOrMore>

<zeroOrMore>

<ref name="number-percentage-style"/>

</zeroOrMore>

<zeroOrMore>

<ref name="number-date-style"/>

</zeroOrMore>

<zeroOrMore>

<ref name="number-time-style"/>

</zeroOrMore>

<zeroOrMore>

<ref name="number-boolean-style"/>

</zeroOrMore>

<zeroOrMore>

<ref name="number-text-style"/>

</zeroOrMore>

</interleave>

</define>

The following examples illustrate the different types of OpenDocument styles.

Example: OpenDocument styles

<office:document ...>

<office:styles>

...

</office:styles>

<office:automatic-styles>

...

</office:automatic-styles>

<office:master-styles>

...

</office:master-styles>

</office:document>

## Page Styles and Layout

The style and layout of the pages in a document is determined by:

* Page Layouts
* Master Pages

A **page layout** describes the physical properties or geometry of a page, for example, page size, margins, header height, and footer height.

A **master page** is a template for pages in a document. It contains a reference to a page layout which specifies the physical properties of the page and can also contain static content that is displayed on all pages in the document that use the master page. Examples of static content are headers, footers, or background graphics.

If a text or spreadsheet document is displayed in a paged layout, the master pages are instantiated to generate a sequence of pages containing the document content. When a master page is instantiated, an empty page is generated with the properties of the page master and the static content of the master page. The body of the page is then filled with content. If multiple pages in a document use the same master page, the master page can be instantiated several times within the document.

In text and spreadsheet documents, a master page can be assigned to paragraph and table styles using a style:master-page-name attribute. Each time the paragraph or table style is applied to text, a page break is inserted before the paragraph or table. The page that starts at the page break position uses the specified master page.

In drawings and presentations, master pages can be assigned to drawing pages using a style:parent-style-name attribute.

**Note:** The OpenDocument paging methodology differs significantly from the methodology used in [XSL]. In XSL, headers and footers are contained within page sequences that also contain the document content. In the OpenDocument format, headers and footers are contained in page styles. With either approach, the content of headers and footers can be changed or omitted without affecting the document content.

Page layouts are described in section 14.3. Master pages are described in section 14.4.

1. Metadata Elements

The metadata elements borrow heavily upon the metadata standards developed by the Dublin Core Metadata Initiative ([http://www.dublincore.org](http://www.dublincore.org/)). Metadata elements drawn directly from the Dublin Core work use its namespace prefix (see section 1.3).

## Pre-Defined Metadata Elements

There is a set of pre-defined metadata elements which should be processed and updated by the applications. Metadata elements may be omitted or occur multiple times. It is application-specific how to update multiple instances of the same elements.

### Generator

The <meta:generator> element contains a string that identifies the application or tool that was used to create or last modify the XML document. This string should match the definition for user-agents in the HTTP protocol a specified in section 14.43 of [RFC2616]. The generator string should allow product versions to differ between all released versions of a user agent, for instance by including build ids or patch level information.

Conforming applications may use the generator string to work around bugs that exist or existed in certain applications, but shall not deliberately implement a different behavior depending on a certain generator string.

If the application that created the document could not provide an identifier string, the application does not export this element. If another application modifies the document and it cannot provide a unique identifier, it shall not export the original identifier belonging to the application that created the document.

<define name="office-meta-data" combine="choice">

<element name="meta:generator">

<ref name="string"/>

</element>

</define>

### Title

The <dc:title> element specifies the title of the document.

<define name="office-meta-data" combine="choice">

<element name="dc:title">

<ref name="string"/>

</element>

</define>

### Description

The <dc:description> element contains a brief description of the document.

<define name="office-meta-data" combine="choice">

<element name="dc:description">

<ref name="string"/>

</element>

</define>

### Subject

The <dc:subject> element specifies the subject of the document.

<define name="office-meta-data" combine="choice">

<element name="dc:subject">

<ref name="string"/>

</element>

</define>

### Keywords

The <meta:keyword> element contains a pertaining to the document. The metadata can contain any number of <meta:keyword> elements, each element specifying one keyword.

<define name="office-meta-data" combine="choice">

<element name="meta:keyword">

<ref name="string"/>

</element>

</define>

### Initial Creator

The <meta:initial-creator> element specifies the name of the person who created the document initially.

<define name="office-meta-data" combine="choice">

<element name="meta:initial-creator">

<ref name="string"/>

</element>

</define>

### Creator

The <dc:creator> element specifies the name of the person who last modified the document. The name of this element was chosen for compatibility with the Dublin Core, but this definition of "creator" used here differs from Dublin Core, which defines creator as "An entity primarily responsible for making the content of the resource." In OpenDocument terminology, the last person to modify the document is primarily responsible for making the content of the document.

<define name="office-meta-data" combine="choice">

<ref name="dc-creator"/>

</define>

<define name="dc-creator">

<element name="dc:creator">

<ref name="string"/>

</element>

</define>

### Printed By

The <meta:printed-by> element specifies the name of the last person who printed the document.

<define name="office-meta-data" combine="choice">

<element name="meta:printed-by">

<ref name="string"/>

</element>

</define>

### Creation Date and Time

The <meta:creation-date> element specifies the date and time when the document was created initially.

To conform with [xmlschema-2], the date and time format is YYYY-MM-DDThh:mm:ss.

<define name="office-meta-data" combine="choice">

<element name="meta:creation-date">

<ref name="dateTime"/>

</element>

</define>

### Modification Date and Time

The <dc:date> element specifies the date and time when the document was last modified.

To conform with [xmlschema-2], the date and time format is YYYY-MM-DDThh:mm:ss.

The name of this element was chosen for compatibility with the Dublin Core.

<define name="office-meta-data" combine="choice">

<ref name="dc-date"/>

</define>

<define name="dc-date">

<element name="dc:date">

<ref name="dateTime"/>

</element>

</define>

### Print Date and Time

The <meta:print-date> element specifies the date and time when the document was last printed.

To conform with [xmlschema-2], the date and time format is YYYY-MM-DDThh:mm:ss.

<define name="office-meta-data" combine="choice">

<element name="meta:print-date">

<ref name="dateTime"/>

</element>

</define>

### Document Template

The <meta:template> element contains a URL for the document template that was used to create the document. The URL is specified as an XLink.

This element conforms to the XLink Specification. See [XLink].

The attributes that may be associated with the <meta:template> element are:

* Template location
* Template title
* Template modification date and time

#### Template Location

An xlink:href attribute specifies the location of the document template.

#### Template Title

The xlink:title attribute specifies the name of the document template.

#### Template Modification Date and Time

The meta:date attribute specifies the date and time when the template was last modified, prior to being used to create the current document.

To conform with [xmlschema-2], the date and time format is YYYY-MM-DDThh:mm:ss.

<define name="office-meta-data" combine="choice">

<element name="meta:template">

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onRequest">

<value>onRequest</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:title">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="meta:date">

<ref name="dateTime"/>

</attribute>

</optional>

</element>

</define>

### Automatic Reload

The <meta:auto-reload> element specifies whether a document is reloaded or replaced by another document after a certain period of time has elapsed.

The attributes that may be associated with the <meta:auto-reload> element are:

* Reload URL
* Reload delay

#### Reload URL

If a loaded document should be replaced by another document after a certain period of time, the <meta:auto-reload> element is presented as an XLink. An xlink:href attribute identifies the URL of the replacement document.

#### Reload Delay

The meta:delay attribute specifies the reload delay.

To conform with the duration data type of [xmlschema-2], the format of the value of this attribute is PnYnMnDTnHnMnS. See §3.2.6 of [xmlschema-2] for more detailed information on this duration format.

<define name="office-meta-data" combine="choice">

<element name="meta:auto-reload">

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:show" a:defaultValue="replace">

<value>replace</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onLoad">

<value>onLoad</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

</optional>

<optional>

<attribute name="meta:delay">

<ref name="duration"/>

</attribute>

</optional>

</element>

</define>

### Hyperlink Behavior

The <meta:hyperlink-behaviour> element specifies the default behavior for hyperlinks in the document.

The only attribute that may be associated with the <meta:hyperlink-behaviour> element is:

* Target frame

#### Target Frame

The meta:target-frame-name attribute specifies the name of the default target frame in which to display a document referenced by a hyperlink.

This attribute can have one of the following values:

* \_self : The referenced document replaces the content of the current frame.
* \_blank : The referenced document is displayed in a new frame.
* \_parent : The referenced document is displayed in the parent frame of the current frame.
* \_top : The referenced document is displayed in the topmost frame, that is the frame that contains the current frame as a child or descendent but is not contained within another frame.
* A frame name : The referenced document is displayed in the named frame. If the named frame does not exist, a new frame with that name is created.

To conform with the XLink Specification, an additional xlink:show attribute is attached to the <meta:hyperlink-behaviour> element. If the value of the meta:target-frame-name attribute is \_blank, the xlink:show attribute value is new. If the value of the meta:target-frame-name attribute is any of the other value options, the value of the xlink:show attribute is replace.

<define name="office-meta-data" combine="choice">

<element name="meta:hyperlink-behaviour">

<optional>

<attribute name="office:target-frame-name">

<ref name="targetFrameName"/>

</attribute>

</optional>

<optional>

<attribute name="xlink:show">

<choice>

<value>new</value>

<value>replace</value>

</choice>

</attribute>

</optional>

</element>

</define>

### Language

The <dc:language> element specifies the default language of the document.

The manner in which the language is represented is similar to the language tag described in [RFC3066]. It consists of a two or three letter Language Code taken from the ISO 639 standard optionally followed by a hyphen (-) and a two-letter Country Code taken from the ISO 3166 standard.

<define name="office-meta-data" combine="choice">

<element name="dc:language">

<ref name="language"/>

</element>

</define>

### Editing Cycles

The <meta:editing-cycles> element specifies the number of editing cycles the document has been through.

The value of this element is incremented every time the document is saved. The element contains the number of editing cycles as text.

<define name="office-meta-data" combine="choice">

<element name="meta:editing-cycles">

<ref name="nonNegativeInteger"/>

</element>

</define>

### Editing Duration

The <meta:editing-duration> element specifies the total time spent editing the document.

The duration is represented in the duration data type of [xmlschema-2], that is PnYnMnDTnHnMnS. See §3.2.6 of [xmlschema-2] for more detailed information on this duration format.

<define name="office-meta-data" combine="choice">

<element name="meta:editing-duration">

<ref name="duration"/>

</element>

</define>

### Document Statistics

The <meta:document-statistic> element specifies the statistics of the document, for example, the page count, word count, and so on. The statistics are specified as attributes of the <meta:document-statistic> element and the statistics that are exported with the document depend on the document type and the application used to create the document.

| Document Type | Document Statistics Attributes |
| --- | --- |
| Text | meta:page-count meta:table-count meta:draw-count meta:image-count meta:object-count meta:ole-object-count meta:paragraph-count  meta:word-count meta:character-count meta:row-count meta:frame-count meta:sentence-count meta:syllable-count meta:non-whitespace-character-count |
| Spreadsheet | meta:page-count meta:table-count meta:image-count meta:cell-count meta:object-count |
| Graphic | meta:page-count meta:image-count meta:object-count |

<define name="office-meta-data" combine="choice">

<element name="meta:document-statistic">

<optional>

<attribute name="meta:page-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="meta:table-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="meta:draw-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="meta:image-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="meta:ole-object-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="meta:object-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="meta:paragraph-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="meta:word-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="meta:character-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="frame-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="sentence-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="syllable-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="non-whitespace-character-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="meta:row-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

<optional>

<attribute name="meta:cell-count">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</element>

</define>

## User-defined Metadata

The <meta:user-defined> element specifies any additional user-defined metadata for the document. Each instance of this element can contain one piece of user-defined metadata. The element contains:

* A meta:name attribute, which identifies the name of the metadata element.
* An optional meta:value-type attribute, which identifies the type of the metadata element. The allowed meta types are float, date, time, boolean and string (see also section 6.7.1).
* The value of the element, which is the metadata in the format described in section 6.7.1 as value of the office:value attributes for the various data types.

The default type for meta-data elements is string.

<define name="office-meta-data" combine="choice">

<element name="meta:user-defined">

<attribute name="meta:name">

<ref name="string"/>

</attribute>

<choice>

<group>

<attribute name="meta:value-type">

<value>float</value>

</attribute>

<ref name="double"/>

</group>

<group>

<attribute name="meta:value-type">

<value>date</value>

</attribute>

<ref name="dateOrDateTime"/>

</group>

<group>

<attribute name="meta:value-type">

<value>time</value>

</attribute>

<ref name="duration"/>

</group>

<group>

<attribute name="meta:value-type">

<value>boolean</value>

</attribute>

<ref name="boolean"/>

</group>

<group>

<attribute name="meta:value-type">

<value>string</value>

</attribute>

<ref name="string"/>

</group>

<text/>

</choice>

</element>

</define>

## Custom Metadata

In addition to the pre-defined metadata elements, applications should also preserve any additional content found inside the <office:meta> element. As there is no semantics specified for such foreign content, applications need not process this information other than to preserve it when editing the document.

1. Text Content

## Headings, Paragraphs and Basic Text Structure

This section describes the XML elements and attributes that are used to represent heading and paragraph components in a text document.

The elements <text:h> and <text:p> represent headings and paragraphs, respectively, and are collectively referred to as paragraph elements. All text content in an OpenDocument file must be contained in either of these elements.

### Headings

Headings define the chapter structure for a document. A chapter or subchapter begins with a heading and extends to the next heading at the same or higher level.

<define name="text-h">

<element name="text:h">

<ref name="heading-attrs"/>

<ref name="paragraph-attrs"/>

<optional>

<ref name="text-number"/>

</optional>

<zeroOrMore>

<ref name="paragraph-content"/>

</zeroOrMore>

</element>

</define>

#### Heading Level

The text:outline-level attribute associated with the heading element determines the level of the heading, starting with 1. Headings without a level attribute are assumed to be at level 1.

<define name="heading-attrs" combine="interleave">

<attribute name="text:outline-level">

<ref name="positiveInteger"/>

</attribute>

</define>

#### Heading Numbering

Header numbering can be changed by additional attributes, similar to those on list items (see section 4.3.2, ). The numbering of headers can be restarted by setting the text:restart-numbering attribute to true.

<define name="heading-attrs" combine="interleave">

<optional>

<attribute name="text:restart-numbering" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Start Value

The attribute text:start-value may be used to restart the numbering of headers of the current header's level, by setting a new value for the numbering.

<define name="heading-attrs" combine="interleave">

<optional>

<attribute name="text:start-value">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

#### Suppress Header Numbering

It is sometimes desired to have a specific heading which should not be numbered. This corresponds to unnumbered list headers in lists (see sections 4.3). To facilitate this, an optional attribute text:is-list-header can be used. If true, the given header will not be numbered, even if an explicit list-style is given.

<define name="heading-attrs" combine="interleave">

<optional>

<attribute name="text:is-list-header" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Formatted Heading Number

If a heading has a numbering applied, the text of the formatted number can be included in a <text:number> element. This text can be used by applications that do not support numbering of headings, but it will be ignored by applications that support numbering.

<define name="text-number">

<element name="text:number">

<ref name="string"/>

</element>

</define>

### Paragraphs

Paragraphs are the basic unit of text.

<define name="text-p">

<element name="text:p">

<ref name="paragraph-attrs"/>

<zeroOrMore>

<ref name="paragraph-content"/>

</zeroOrMore>

</element>

</define>

### Common Paragraph Elements Attributes

The paragraph elements have text:style-name, text:class-names and text:cond-style-name attributes. These attributes must reference paragraph styles.

A text:style-name attribute references a paragraph style, while a text:cond-style-name attribute references a conditional-style, that is, a style that contains conditions and maps to other styles (see section 14.1.1). If a conditional style is applied to a paragraph, the text:style-name attribute contains the name of the style that was the result of the conditional style evaluation, while the conditional style name itself is the value of the text:cond-style-name attribute. This XML structure simplifies [XSLT] transformations because XSLT only has to acknowledge the conditional style if the formatting attributes are relevant. The referenced style can be a common style or an automatic style.

A text:class-names attribute takes a whitespace separated list of paragraph style names. The referenced styles are applied in the order they are contained in the list. If both, text:style-name and text:class-names are present, the style referenced by the text:style-name attribute is as the first style in the list in text:class-names. If a conditional style is specified together with a style:class-names attribute, but without the text:style-name attribute, then the first style in the style list is used as the value of the missing text:style-name attribute.

Conforming applications should support the text:class-names attribute and also should preserve it while editing.

<define name="paragraph-attrs">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<optional>

<attribute name="text:class-names">

<ref name="styleNameRefs"/>

</attribute>

</optional>

<optional>

<attribute name="text:cond-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

Example: Styles and conditional styles

<text:p text:style-name="Heading 1">

"Heading 1" is not a conditional style.

</text:p>

<text:p text:style-name="Numbering 1" text:cond-style-name="Text body">

"Text body" is a conditional style. If it is contained in a numbered

paragraph, it maps to "Numbering 1". This is assumed in this example.

</text:p>

A paragraph may have an ID. This ID can be used to reference the paragraph from other elements.

<define name="paragraph-attrs" combine="interleave">

<optional>

<ref name="text-id"/>

</optional>

</define>

## Page Sequences

A page sequence element <text:page-sequence> specifies a sequence of master pages that are instantiated in exactly the same order as they are referenced in the page sequence. If a text document contains a page sequence, it will consist of exactly as many pages as specified. Documents with page sequences do not have a main text flow consisting of headings and paragraphs as is the case for documents that do not contain a page sequence. Text content is included within text boxes for documents with page sequences. The only other content that is permitted are drawing objects.

Example: Page Sequence

<style:automatic-style>

<style:page-layout name="pm1">

<!-- portrait page -->

</style:page-layout>

<style:page-layout name="pm2">

<!-- landscape page -->

</style:page-layout>

</style:automatic-style>

...

<style:master-styles>

<style:master-page name="portrait" style:page-layout-name="pm1"/>

<style:master-page name="landscape" style:page-layout-name="pm2"/>

</style:master-styles>

...

<office:body>

<text:page-sequence>

<text:page text:master-page-name="portrait"/>

<text:page text:master-page-name="portrait"/>

<text:page text:master-page-name="landscape"/>

<text:page text:master-page-name="landscape"/>

<text:page text:master-page-name="portrait"/>

</text:page-sequence>

<draw:frame ...>

<draw:text-box ...>

<text:p>Example text.</text:p>

...

</draw:text-box>

</draw:frame>

</office:body>

<define name="text-page-sequence">

<element name="text:page-sequence">

<oneOrMore>

<ref name="text-page"/>

</oneOrMore>

</element>

</define>

### Page

The <text:page> element specifies a single page within a page sequence.

<define name="text-page">

<element name="text:page">

<ref name="text-page-attlist"/>

<empty/>

</element>

</define>

#### Master Page Name

The text:master-page-name attribute specifies the master page that is instantiated.

<define name="text-page-attlist">

<attribute name="text:master-page-name">

<ref name="styleNameRef"/>

</attribute>

</define>

## Lists

The OpenDocument format supports list structures, similar to those found in [HTML4]. A list is a paragraph-level element, which contains an optional list header, followed by a sequence of list items. The list header and each list item contains a sequence of paragraph or list elements. Lists can be nested.

Lists may be numbered. The numbering may be restarted with a specific numbering at each list item. Lists may also continue numbering from other lists, allowing the user to merge several lists into a single, discontinuous list. Note that whether the list numbering is displayed depends on a suitable list style being used.

In addition to this structural information, lists can have list styles associated with them, which contain the relevant layout information, such as

* the type of list item label, such as bullet or number,
* list item label width and distance,
* bullet character or image (if any),
* number format for the bullet numbering (if any),
* paragraph indent for list items.

### List Block

A list is represented by the <text:list> element. It contains an optional list header, followed by any number of list items.

Every list has a list level, which is determined by the nesting of the <text:list> elements. If a list is not contained within another list, the list level is 1. If the list in contained within another list, the list level is the list level of the list in which is it contained incremented by one. If a list is contained in a table cell or text box, the list level returns to 1, even though the table or textbox itself may be nested within another list.

The attributes that may be associated with the list element are:

* Style name
* Continue numbering

<define name="text-list">

<element name="text:list">

<ref name="text-list-attr"/>

<optional>

<ref name="text-list-header"/>

</optional>

<zeroOrMore>

<ref name="text-list-item"/>

</zeroOrMore>

</element>

</define>

#### Style Name

The optional text:style-name attribute specifies the name of the list style that is applied to the list.

If this attribute is not included and therefore no list style is specified, one of the following actions is taken:

* If the list is contained within another list, the list style defaults to the style of the surrounding list.
* If there is no list style specified for the surrounding list, but the list contains paragraphs that have paragraph styles attached specifying a list style, this list style is used for any of these paragraphs.
* A default list style is applied to any other paragraphs.

To determine which formatting properties are applied to a list, the list level and list style name are taken into account. See section 14.10 for more information on list formatting properties.

<define name="text-list-attr" combine="interleave">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Continue Numbering

By default, the first list item in a list starts with the number specified in the list style. The continue numbering attribute can be used to continue the numbering from the preceding list.

This attribute can be used with the <text:list> element and can have a value of true or false.

If the value of the attribute is true and the numbering style of the preceding list is the same as the current list, the number of the first list item in the current list is the number of the last item in the preceding list incremented by one.

<define name="text-list-attr" combine="interleave">

<optional>

<attribute name="text:continue-numbering">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### List Item

List items contain the textual content of a list. A <text:list-item> element can contain paragraphs, headings, lists or soft page breaks. A list item cannot contain tables.

<define name="text-list-item">

<element name="text:list-item">

<ref name="text-list-item-attr"/>

<ref name="text-list-item-content"/>

</element>

</define>

<define name="text-list-item-content">

<optional>

<ref name="text-number"/>

</optional>

<zeroOrMore>

<choice>

<ref name="text-p"/>

<ref name="text-h"/>

<ref name="text-list"/>

<ref name="text-soft-page-break"/>

</choice>

</zeroOrMore>

</define>

The first line in a list item is preceded by a bullet or number, depending on the list style assigned to the list. If a list item starts another list immediately and does not contain any text, no bullet or number is displayed.

The only attribute that may be associated with the <text:list-item> element is:

* Start value

#### Start Value

The numbering of the current list can be restarted at a certain number. The text:start-value attribute is used to specify the number with which to restart the list.

This attribute can only be applied to items in a list with a numbering list style. It restarts the numbering of the list at the current item.

<define name="text-list-item-attr" combine="interleave">

<optional>

<attribute name="text:start-value">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

#### Formatted Number

If a list item has a numbering applied, the text of the formatted number can be included in a <text:number> element. This text can be used by applications that do not support numbering, but it will be ignored by applications that support numbering. See also section 4.1.1.

Example: Lists and sublists

<text:list text:style-name="List 1">

<text:list-item>

<text:p>This is the first list item</text:p>

<text:p>This is a continuation of the first list item.</text:p>

</text:list-item>

<text:list-item>

<text:p>This is the second list item.

It contains a sub list.</text:p>

<text:list>

<text:list-item><text:p>This is a sub list item.</text:p>

</text:list-item>

<text:list-item><text:p>This is a sub list item.</text:p>

</text:list-item>

<text:list-item><text:p>This is a sub list item.</text:p>

</text:list-item>

</text:list>

</text:list-item>

<text:list-item>

<text:p>This is the third list item</text:p>

</text:list-item>

</text:list>

### List Header

A list header is a special kind of list item. It contains one or more paragraphs that are displayed before a list. The paragraphs are formatted like list items but they do not have a preceding number or bullet. The list header is represented by the list header element.

<define name="text-list-header">

<element name="text:list-header">

<ref name="text-list-item-content"/>

</element>

</define>

### Numbered Paragraphs

In some instances, it is desirable to specify a list not as a structural element comprising of several list items, but to determine on a per-paragraph level whether the paragraph is numbered, and at which level. To facilitate this, the <text:numbered-paragraph> element allows the numbering of an individual paragraph, as if it was part of a list at a specified level.

Numbered paragraphs may use the same continuous numbering properties that list items use, and thus form an equivalent, alternative way of specifying lists. A list in <text:list> representation could be converted into a list in <text:numbered-paragraph> representation and vice versa.

<define name="text-numbered-paragraph">

<element name="text:numbered-paragraph">

<ref name="text-numbered-paragraph-attr"/>

<optional>

<ref name="text-number"/>

</optional>

<choice>

<ref name="text-p"/>

<ref name="text-h"/>

</choice>

</element>

</define>

A numbered paragraph can be assigned a list level. A numbered paragraph is equivalent to a list nested to the given level, containing one list item with one paragraph. If no level is given, the numbered paragraph is interpreted as being on level 1.

<define name="text-numbered-paragraph-attr" combine="interleave">

<optional>

<attribute name="text:level" a:defaultValue="1">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

As a numbered paragraph combines the functionality of a (possibly nested) list with a single list item, it can also use the attributes of those elements.

<define name="text-numbered-paragraph-attr" combine="interleave">

<ref name="text-list-attr"/>

</define>

<define name="text-numbered-paragraph-attr" combine="interleave">

<ref name="text-list-item-attr"/>

</define>

The text of a formatted number can be included in a <text:number> element. This text can be used by applications that do not support numbering, but it will be ignored by applications that support numbering. See also section 4.1.1.

## Text Sections

A text section is a named region of paragraph-level text content. Sections start and end on paragraph boundaries and can contain any number of paragraphs.

Sections have two uses in the OpenDocument format: They can be used to assign certain formatting properties to a region of text. They can also be used to group text that is automatically acquired from some external data source.

In addition to Sections can contain regular text content or the text can be contained in another file and linked to the section. Sections can also be write-protected or hidden.

Sections can have settings for text columns, background color or pattern, and notes configuration. These settings form the section style, which is represented in a <style:style> element. See section 14.8.3 for details.

The formatting properties for sections are explained in section 15.7.

Sections support two ways of linking to external content. If a section is linked to another document, the link can be through one of the following:

* A resource identified by an XLink, represented by a text:section-source element
* Dynamic Data Exchange (DDE), represented by a office:dde-source element

Linking information for external content is contained in the section element's first child. A section that links to external content contains the full representation of the data source, so that processors need to understand the linking information only if they wish to update the contents of the section.

<define name="text-section">

<element name="text:section">

<ref name="text-section-attr"/>

<choice>

<ref name="text-section-source"/>

<ref name="text-section-source-dde"/>

<empty/>

</choice>

<zeroOrMore>

<ref name="text-content"/>

</zeroOrMore>

</element>

</define>

**Note:** List items may not contain sections. Thus, lists may only be wholly contained within section elements. If it is desired to achieve the effect of overlapping lists and sections, or of sections contained within lists, the lists must be split into several lists, each of which would then be wholly contained within a section. When splitting the list, suitable attributes for continuous numbering should be set such that display and behavior are the same as with the original list not interrupted by sections.

### Section Attributes

Text indices, described in chapter 7, may be considered a special kind of text section, as they share the same general structure as well as certain attributes. These are combined in the following definition:

<define name="text-section-attr" combine="interleave">

<ref name="sectionAttr"/>

</define>

The remaining attributes in this section are specific to the <text:section> element.

#### Section Style

The text:style-name attribute refers to a section style.

<define name="sectionAttr" combine="interleave">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Section Name

Every section must have a name that uniquely identifies the section. The text:name attribute contains the name of the section.

<define name="sectionAttr" combine="interleave">

<attribute name="text:name">

<ref name="string"/>

</attribute>

</define>

#### Protected Sections

A section can be protected, which means that a user can not edit the section. The text:protected attribute indicates whether or not a section is protected. The user interface must enforce the protection attribute if it is enabled.

<define name="sectionAttr" combine="interleave">

<optional>

<attribute name="text:protected">

<ref name="boolean"/>

</attribute>

</optional>

</define>

A user can use the user interface to reset the protection flag, unless the section is further protected by a password. In this case, the user must know the password in order to reset the protection flag. The text:protection-key attribute specifies the password that protects the section. To avoid saving the password directly into the XML file, only a hash value of the password is stored.

<define name="sectionAttr" combine="interleave">

<optional>

<attribute name="text:protection-key">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Hidden Sections and Conditional Sections

Sections can be hidden based on a condition or they can be hidden unconditionally.

The text:display attribute specifies whether or not the section is hidden. The value of this attribute can be:

* true, the section is displayed. This is the default setting.
* none, the section is hidden unconditionally.
* condition, the section is hidden under the condition specified in the text:condition attribute.

The text:condition attribute specifies the condition under which the section is hidden. The condition is encoded as a string. If the value of text:display is condition, the text:condition attribute must be present.

<define name="text-section-attr" combine="interleave">

<choice>

<attribute name="text:display">

<choice>

<value>true</value>

<value>none</value>

</choice>

</attribute>

<group>

<attribute name="text:display">

<value>condition</value>

</attribute>

<attribute name="text:condition">

<ref name="string"/>

</attribute>

</group>

<empty/>

</choice>

</define>

### Section Source

The <text:section-source> element indicates that the enclosed section is a linked section. If this element is used, it must be the first element in the <text:section> element.

<define name="text-section-source">

<element name="text:section-source">

<ref name="text-section-source-attr"/>

</element>

</define>

The attributes that may be associated with the <text:section-source> attribute are:

* Section source URL
* Name of linked section
* Filter name

#### Section Source URL

These attributes identify the document or section to which the section is linked. The name of the target section is identified by the local part of the URL, following the hash mark. The xlink:href attribute is implied because <text:section-source> elements may also link to internal sections.

<define name="text-section-source-attr" combine="interleave">

<optional>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:show" a:defaultValue="embed">

<value>embed</value>

</attribute>

</optional>

</optional>

</define>

#### Name of Linked Section

If the link targets a section of a document, the attribute text:section name contains the name of the target section. If the attribute is not present, the link targets the entire document.

<define name="text-section-source-attr" combine="interleave">

<optional>

<attribute name="text:section-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Filter Name

The text:filter-name attribute specifies which filter type was used to import the link target. The value of this attribute is implementation dependent.

<define name="text-section-source-attr" combine="interleave">

<optional>

<attribute name="text:filter-name">

<ref name="string"/>

</attribute>

</optional>

</define>

### DDE Source

If sections are linked via DDE, their linking information is represented by <office:dde-source> elements. It contains attributes that specify the application, topic and item of the DDE connection. Note that because the section contains the XML rendition of the DDE link's content, this information only needs to be processed if updated data from the DDE link are desired.

See section 12.6 for the use of DDE connections.

<define name="text-section-source-dde">

<ref name="office-dde-source"/>

</define>

## Page-bound graphical content

Within text documents, images, embedded objects and other drawing objects appear at the level of a paragraph if they are anchored to a page rather than to a paragraph or a character position within a paragraph. See section 9.2 for details on drawing objects, and section 9.2.16 for their anchoring.

## Change Tracking

This section describes how changes in text documents can be represented.

### Tracked Changes

All tracked changes to text documents are stored in a list. The list contains an element for each change made to the document. If the <text:tracked-changes> element is absent, change tracking is not enabled.

<define name="text-tracked-changes">

<optional>

<element name="text:tracked-changes">

<ref name="text-tracked-changes-attr"/>

<zeroOrMore>

<ref name="text-changed-region"/>

</zeroOrMore>

</element>

</optional>

</define>

#### Track Changes

This attribute determines whether or not user agents should track and record changes for this document.

<define name="text-tracked-changes-attr" combine="interleave">

<optional>

<attribute name="text:track-changes" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Changed Regions

For every changed region of a document, there is one entry in the list of tracked changes. This entry contains a list of all changes that were applied to the region. The start and end of this region are marked by the start and end elements that are described in the next section.

<define name="text-changed-region">

<element name="text:changed-region">

<ref name="text-changed-region-attr"/>

<ref name="text-changed-region-content"/>

</element>

</define>

#### Change ID

Every element has an ID. The elements that mark the start and end of a region use this ID to identify the region to which they belong.

<define name="text-changed-region-attr" combine="interleave">

<attribute name="text:id">

<ref name="ID"/>

</attribute>

</define>

### Insertion

The <text:insertion> element contains the information that is required to identify any insertion of content. This content can be a piece of text within a paragraph, a whole paragraph, or a whole table. The inserted content is part of the text document itself and is marked by a change start and a change end element.

<define name="text-changed-region-content" combine="choice">

<element name="text:insertion">

<ref name="office-change-info"/>

</element>

</define>

**Example**: Insertion of text

<text:tracked-changes>

<text:changed-region text:id="c001">

<text:insertion>

<office:change-info>

<dc:creator>Michael Brauer</dc:creator>

<dc:date>1999-05-18T12:56:04</dc:date>

</office:change-info>

</text:insertion>

</text:changed-region>

</text:tracked-changes>

<text:p>

This is the original text<text:change-start text:change-id="c001"/>,

but this has been added<text:change-end text:change-id="c001"/>.

</text:p>

### Deletion

A <text:deletion> element contains content that was deleted while change tracking was enabled. The position where the text was deleted is marked by the change position element.

If part of a paragraph was deleted, the text that was deleted is contained in this element as a paragraph element. If the deleted text is reinserted into the document, the paragraph is joined with the paragraph where the deletion took place.

<define name="text-changed-region-content" combine="choice">

<element name="text:deletion">

<ref name="office-change-info"/>

<zeroOrMore>

<ref name="text-content"/>

</zeroOrMore>

</element>

</define>

**Example:** Deletion of text

<text:tracked-changes>

<text:changed-region text:id="c002">

<text:deletion>

<office:change-info>

<dc:creator>Michael Brauer</dc:creator>

<dc:date>1999-05-18T12:56:04</dc:date>

</office:change-info>

<text:p>, but this has been deleted</text:p>

</text:deletion>

</text:changed-region>

</text:tracked-changes>

<text:p>

This is the original text<text:change text:region-id="c002"/>.

</text:p>

This example shows:

* Deleted text = , but this has been deleted   
  This text is contained in the <text:p> element within the <text:deletion> element.
* Current text = This is the original text.   
  This text is contained in the <text:p> element at the end of the example.
* Original text before deletion took place = This is the original text, but this has been deleted.

Note that the deleted text, like all text in the OpenDocument format, is contained in a paragraph element. To reconstruct the original text, this paragraph is merged with its surrounding. In other words, a deletion consisting of only a single word would be represented as a paragraph containing the word.

To reconstruct the text before the deletion took place, do:

* If the change mark is inside a paragraph, insert the text content of the <text:deletion> element as if the beginning <text:p> and final </text:p> tags were missing.
* If the change mark is inside a header, proceed as above, except adapt the end tags to match their new counterparts.
* Otherwise, simply copy the text content of the <text:deletion> element in place of the change mark.

**Example**: Given the following change:

<text:changed-region text:id="example">

<text:deletion>

<office:change-info>...</office:change-info>

<text:p>Hello</text:p>

<text:p>World!</text:p>

</text:deletion>

</text:changed-region>

The first (and most common) case occurs if a change mark is inside a regular paragraph:

<text:p>abc<text:change text:id="example/>def</text:p>

To reconstruct the original text, the two <text:p> elements are copied to replace the change mark, except the beginning and ending tags are missing:

<text:p>abcHello</text:p>

<text:p>World!def</text:p>

If the change mark occurred inside a header, the same procedure is followed, except the copied tags are adapted to make sure we still have well-formed XML.

<text:h>abc<text:change text:id="example/>def</text:h>

becomes:

<text:h>abcHello</text:h>

<text:h>World!def</text:h>

The third case occurs when a change occurs outside of a paragraph. In this case, the deleted text is simply copied verbatim.

<text:p>abcdef</text:p>

<text:change text:id="example/>

<text:p>ghijkl</text:p>

This becomes:

<text:p>abcdef</text:p>

<text:p>Hello</text:p>

<text:p>World!</text:p>

<text:p>ghijkl</text:p>

If, in the first two cases, the deletion contains complete paragraphs, then additional empty paragraphs must be put into the <text:deletion> element to achieve the desired result.

The change that took place from

<text:p>abc</text:p>

<text:h>Hello</text:h>

<text:h>World!</text:h>

<text:p>def</text:p>

to

<text:p>abc<text:change text:id="example/>def</text:p>

would be represented as:

<text:changed-region text:id="example">

<text:deletion>

<office:change-info>...</office:change-info>

<text:p/>

<text:h>Hello</text:h>

<text:h>World!</text:h>

<text:p/>

</text:deletion>

</text:changed-region>

### Format Change

A format change element represents any change in formatting attributes. The region where the change took place is marked by a change start and a change end element.

<define name="text-changed-region-content" combine="choice">

<element name="text:format-change">

<ref name="office-change-info"/>

</element>

</define>

**Note:** A format change element does not contain the actual changes that took place.

### Change Info

The change info element contains meta information who made the change and when. It is also used for spreadsheet documents, and thus described in a section 12.3 ().

### Change Marks

There are three elements that mark the start and the end of a changed region, as follows:

* Change start element – <text:change-start>   
  This element marks the start of a region with content where text has been inserted or the format has been changed.
* Change end element – <text:change-end>  
  This element marks the end of a region with content where text has been inserted or the format has been changed.
* Change position element – <text:change>  
  This element marks a position in an empty region where text has been deleted.

All three elements have an attribute that specifies the ID of the region to which they belong.

<define name="change-marks">

<choice>

<element name="text:change">

<ref name="change-mark-attr"/>

</element>

<element name="text:change-start">

<ref name="change-mark-attr"/>

</element>

<element name="text:change-end">

<ref name="change-mark-attr"/>

</element>

</choice>

</define>

<define name="change-mark-attr">

<attribute name="text:change-id">

<ref name="IDREF"/>

</attribute>

</define>

## Soft Page Break

The <text:soft-page-break> element represents a soft page break.

See section 2.3.1: for details regarding soft page breaks.

<define name="text-soft-page-break">

<element name="text:soft-page-break">

<empty/>

</element>

</define>

## Text Declarations

Several text elements need per-document declarations before they can be used. For example, variable fields require that the variables used are being declared at the beginning of the document. These declarations are collected at the beginning of a text document. All such declarations are optional. The detailed description for each declaration can be found in the appropriate chapter.

The supported text declarations are:

* variable declarations – These declarations are used for variable fields. (cf. section 6.3.1).
* user field declarations – These declarations are used for user-defined fields (cf. section 6.3.5).
* sequence declarations – These declarations are used for sequence fields (cf. section 6.3.8).
* DDE connections – These declarations are used for DDE fields and DDE sections (cf. sections 6.6.9 and 4.4.3, respectively).
* auto mark file – This declaration is used for generation of alphabetical indices (cf. section 7.8.2).

<define name="text-decls">

<optional>

<element name="text:variable-decls">

<zeroOrMore>

<ref name="text-variable-decl"/>

</zeroOrMore>

</element>

</optional>

<optional>

<element name="text:sequence-decls">

<zeroOrMore>

<ref name="text-sequence-decl"/>

</zeroOrMore>

</element>

</optional>

<optional>

<element name="text:user-field-decls">

<zeroOrMore>

<ref name="text-user-field-decl"/>

</zeroOrMore>

</element>

</optional>

<optional>

<element name="text:dde-connection-decls">

<zeroOrMore>

<ref name="text-dde-connection-decl"/>

</zeroOrMore>

</element>

</optional>

<optional>

<ref name="text-alphabetical-index-auto-mark-file"/>

</optional>

</define>

1. Paragraph Elements Content

## Basic Text Content

Paragraph element's children make up the text content of any document. All text contained in a paragraph element or their children is text content, with few exceptions detailed later. This should significantly ease transformations into other formats, since transformations may ignore any child elements of paragraph elements and only process their text content, and still obtain a faithful representation of text content.

Text content elements that do not contain in-line text children are:

* (foot- and end-)notes (see section 5.3)

Foot- and endnotes contain text content, but are typically displayed outside the main text content, e.g., at the end of a page or document.

* rubies (see section 5.4)

Ruby texts are usually displayed above or below the main text.

* annotations (see section 5.5)

Annotations are typically not displayed.

<define name="paragraph-content" combine="choice">

<text/>

</define>

### White-space Characters

If the paragraph element or any of its child elements contains white-space characters, they are collapsed. Leading white-space characters at the paragraph start as well as trailing white-space characters at the paragraph end are ignored. In detail, the following conversions take place:

The following [UNICODE] characters are normalized to a SPACE character:

* HORIZONTAL TABULATION (0x0009)
* CARRIAGE RETURN (0x000D)
* LINE FEED (0x000A)
* SPACE (0x0020)

In addition, these characters are ignored if the preceding character is a white-space character. The preceding character can be contained in the same element, in the parent element, or in the preceding sibling element, as long as it is contained within the same paragraph element and the element in which it is contained processes white-space characters as described above. White-space characters at the start or end of the paragraph are ignored, regardless whether they are contained in the paragraph element itself, or in a child element in which white-space characters are collapsed as described above.

These white-space processing rules shall enable authors to use white-space characters to improve the readability of the XML source of an OpenDocument document in the same way as they can use them in HTML.

White-space processing takes place within the following elements:

* <text:p>
* <text:h>
* <text:span>
* <text:a>
* <text:ref-point>
* <text:ref-point-start>
* <text:ref-point-end>
* <text:bookmark>
* <text:bookmark-start>
* <text:bookmark-end>

Note: In [XSL], white-space processing of a paragraph of text can be enabled by attaching an fo:white-space="collapse" attribute to the <fo:block> element that corresponds to the paragraph element.

, in other words they areprocessed in the same way that [HTML4] processes them.

#### Space Character

In general, consecutive white-space characters in a paragraph are collapsed. For this reason, there is a special XML element used to represent the [UNICODE] character SPACE (0x0020).

This element uses an optional attribute called text:c to specify the number of SPACE characters that the element represents. A missing text:c attribute is interpreted as meaning a single SPACE character.

This element is required to represent the second and all following SPACE characters in a sequence of SPACE characters. It is not an error if the character preceding the element is not a white-space character, but it is good practice to use this element for the second and all following SPACE characters in a sequence. This way, an application recognizes a single space character without recognizing this element.

<define name="paragraph-content" combine="choice">

<element name="text:s">

<optional>

<attribute name="text:c">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</element>

</define>

#### Tab Character

The <text:tab> element represents the [UNICODE] tab character HORIZONTAL TABULATION (0x0009) in a heading or paragraph. A <text:tab> element reserves space from the current position up to the next tab-stop, as defined in the paragraph's style information.

<define name="paragraph-content" combine="choice">

<element name="text:tab">

<ref name="text-tab-attr"/>

</element>

</define>

To determine which tab-stop a tab character will advance to requires layout information. To make it easier for non-layout oriented processors to determine this information, applications may generate a text:tab-ref attribute as a hint that associates a tab character with a tab-stop in the current paragraph style. It contains the number of the tab-stop that the tab character refers to. The position 0 has a special meaning and signifies the start margin of the paragraph.

<define name="text-tab-attr">

<optional>

<attribute name="text:tab-ref">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

**Note:** The text:tab-ref attribute is only a hint to help non-layout oriented processors to determine the tab/tab-stop association. Layout oriented processors should determine the tab positions solely based on the style information.

#### Line Breaks

The <text:line-break> element represents a line break in a heading or paragraph.

<define name="paragraph-content" combine="choice">

<element name="text:line-break">

<empty/>

</element>

</define>

#### Soft Page Break

The <text:soft-page-break> element represents a soft page break within a heading or paragraph.

See section 2.3.1: for details regarding soft page breaks.

<define name="paragraph-content" combine="choice">

<ref name="text-soft-page-break"/>

</define>

### Soft Hyphens, Hyphens, and Non-breaking Blanks

Soft hyphens, hyphens, and non-breaking blanks are represented by [UNICODE] characters.

|  |  |
| --- | --- |
| The [UNICODE] character... | Represents... |
| SOFT HYPHEN (00AD) | soft hyphens |
| NON-BREAKING HYPHEN (2011) | non-breaking hyphens |
| NO-BREAK SPACE (00A0) | non-breaking blanks |

### Attributed Text

The <text:span> element represents portions of text that are attributed using a certain text style or class. The content of this element is the text that uses the text style.

The name of the a text style or text class is the value of a text:style-name or text:class-names attributes, respectively, attached to the <text:span> element. These attributes must refer to text styles or classes.

A text:style-name attribute references a single text style. A text:class-names attribute takes a whitespace separated list of text style names. The referenced text styles are applied in the order they are contained in the list. If both, text:style-name and text:class-names are present, the style referenced by the text:style-name attribute is treated as the first style in the list in text:class-names. Conforming application should support the text:class-names attribute and also should preserve it while editing.

<text:span> elements can be nested.

White-space characters contained in this element are collapsed.

<define name="paragraph-content" combine="choice">

<element name="text:span">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<optional>

<attribute name="text:class-names">

<ref name="styleNameRefs"/>

</attribute>

</optional>

<zeroOrMore>

<ref name="paragraph-content"/>

</zeroOrMore>

</element>

</define>

Example: Text style in **OpenDocument** documents:

<text:p>

The last word of this sentence is

<text:span text:style-name="emphasize">emphasized</text:span>.

</text:p>

### Hyperlinks

Hyperlinks in text documents are represented by a <text:a> element.

This element also contains an event table element, <office:event-listeners>, which contains the events assigned to the hyperlink. See section 12.4 for more information on the event table element.

<define name="paragraph-content" combine="choice">

<element name="text:a">

<ref name="text-a-attlist"/>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="paragraph-content"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <text:a> element are:

* Name
* Link location
* Target frame
* Text styles

#### Name

A hyperlink can have a name, but it is not essential. The office:name attribute specifies the name of the hyperlink if one exists. This name can serve as a target for some other hyperlinks.

<define name="text-a-attlist" combine="interleave">

<optional>

<attribute name="office:name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Title

The office:title attribute specifies a short accessible description for hint text.

See appendix E for guidelines how to use this attribute.

<define name="text-a-attlist" combine="interleave">

<optional>

<attribute name="office:title">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Link Location

The xlink:href attribute specifies the URL for the target location of the link.

<define name="text-a-attlist" combine="interleave">

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onRequest">

<value>onRequest</value>

</attribute>

</optional>

</define>

#### Target Frame

The office:target-frame-name attribute specifies the target frame of the link. This attribute can have one of the following values:

* \_self – The referenced document replaces the content of the current frame.
* \_blank – The referenced document is displayed in a new frame.
* \_parent – The referenced document is displayed in the parent frame of the current frame.
* \_top – The referenced document is displayed in the uppermost frame, that is the frame that contains the current frame as a child or descendent but is not contained within another frame.
* A frame name – The referenced document is displayed in the named frame. If the named frame does not exist, a new frame with that name is created.

To conform with the XLink Specification, an additional xlink:show attribute is attached to the <text:a> element. If the value of the attribute is \_blank, the xlink:show attribute value is new. If the value of the attribute is any of the other value options, the value of the xlink:show attribute is replace. See [XLink].

<define name="text-a-attlist" combine="interleave">

<optional>

<attribute name="office:target-frame-name">

<ref name="targetFrameName"/>

</attribute>

</optional>

<optional>

<attribute name="xlink:show">

<choice>

<value>new</value>

<value>replace</value>

</choice>

</attribute>

</optional>

</define>

#### Text Styles

Every hyperlink has two text styles as follows:

* If the link location of the hyperlink was not visited, the text style specifies by the text:style-name attribute is applied to the text of the hyperlink.
* If the link location of the hyperlink was already visited, the text style specified by the text:visited-style-name attribute is applied to the text of the hyperlink

<define name="text-a-attlist" combine="interleave">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<optional>

<attribute name="text:visited-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

## Bookmarks and References

### Bookmarks

Bookmarks can either mark a text position or a text range. A text range can start at any text position and end at another text position. In particular, a bookmark can start in the middle of one paragraph and end in the middle of another paragraph. The XML element used to represent a bookmark varies depending on the type of bookmark, as follows:

* <text:bookmark> – to mark one text position
* <text:bookmark-start> – to mark the start position in a text range
* <text:bookmark-end> – to mark the end position in a text range

For every <text:bookmark-start> element, there must be a <text:bookmark-end> element in the same text flow using the same text:name attribute, and vice versa. The <text:bookmark-start> element must precede the <text:bookmark-end> element.

<define name="paragraph-content" combine="choice">

<choice>

<element name="text:bookmark">

<attribute name="text:name">

<ref name="string"/>

</attribute>

</element>

<element name="text:bookmark-start">

<attribute name="text:name">

<ref name="string"/>

</attribute>

</element>

<element name="text:bookmark-end">

<attribute name="text:name">

<ref name="string"/>

</attribute>

</element>

</choice>

</define>

Example: Bookmarks

<text:p>

<text:bookmark text:name="Mark 1"/>There is a text mark in front of this

paragraph.

<text:bookmark-start text:name="Mark 2"/>In front of this paragraph there is

the start of a bookmark.

</text:p>

<text:p>

This bookmark ends

<text:bookmark-end text:name="Mark 2"/>

amid this sentence.

</text:p>

### References

The representation of references is modeled on the XML representation of bookmarks. There are two types of reference marks, as follows:

* A point reference  
  A point reference marks a particular position in text and is represented by a single <text:reference-mark> element.
* A range reference  
  A range reference marks a range of characters in text and is represented by two elements; <text:reference-mark-start> to mark the start of the range and <text:reference-mark-end> to mark the end of the range.

Every reference is identified by its name, which must be unique. In a range reference, the start and end elements must use the same reference name.

#### Point References

The <text:reference-mark> element represents a point reference.

<define name="paragraph-content" combine="choice">

<element name="text:reference-mark">

<attribute name="text:name">

<ref name="string"/>

</attribute>

</element>

</define>

#### Range References

The <text:reference-mark-start> and <text:reference-mark-end> elements represent a range reference.

<define name="paragraph-content" combine="choice">

<choice>

<element name="text:reference-mark-start">

<attribute name="text:name">

<ref name="string"/>

</attribute>

</element>

<element name="text:reference-mark-end">

<attribute name="text:name">

<ref name="string"/>

</attribute>

</element>

</choice>

</define>

In the OpenDocument schema, three elements are used to represent references instead of one element because references represented as a single XML element:

* Cannot support overlapping references
* Do not interact well with other elements

Take the following example:

Example: Overlapping range references

<text:p>  
 <text:reference-mark-start text:name="first"/>This is an

<text:reference-mark-start text:name="second"/>example of a sentence

<text:reference-mark-end text:name="first"/>with overlapping references.

<text:reference-mark-end text:name="second"/>  
</text:p>

The example paragraph shows two references that cover the following text:

|  |  |
| --- | --- |
| reference “first” | “This is an example of a sentence” |
| reference “second” | “example of a sentence with overlapping references.” |

This overlapping structure cannot be represented using a single reference element to contain the referenced text. Similarly, a reference spanning multiple paragraphs creates the same situation as two overlapping XML elements, as does character formatting either starts or ends, but not both, within the referenced text.

## Notes

Notes consist of a <text:note> element which occurs in the text stream at the position to which the note is anchored. How notes are numbered and rendered is determined by <text:notes-configuration> element, which occurs inside the <office:styles> section.

### Note Element

The note element represents text notes which are attached to a certain text position. A common implementation of this concept are the footnotes and endnotes found in most word processors. A note contains a note citation element and a note body elements, which contains the note's content.

In OpenDocument documents, notes are represented in a similar fashion to footnotes in [XSL]. In XSL, the first child of the note element contains the citation in the form of an <fo:inline> element. The OpenDocument schema uses the same structure but introduces a <text:note-citation> element. The second child contains the note body, just as in XSL.

Additionally, OpenDocument features <text:notes-configuration> elements. To achieve a similar effect to the note configuration in XSL, every note citation element must be formatted appropriately.

<define name="paragraph-content" combine="choice">

<element name="text:note">

<ref name="text-note-class"/>

<optional>

<attribute name="text:id">

<ref name="string"/>

</attribute>

</optional>

<element name="text:note-citation">

<optional>

<attribute name="text:label">

<ref name="string"/>

</attribute>

</optional>

<text/>

</element>

<element name="text:note-body">

<zeroOrMore>

<ref name="text-content"/>

</zeroOrMore>

</element>

</element>

</define>

#### Note Class

Each note belongs to a class which determines how the note is expected to be rendered. Currently, two note classes are supported: Footnotes and endnotes.

<define name="text-note-class">

<attribute name="text:note-class">

<choice>

<value>footnote</value>

<value>endnote</value>

</choice>

</attribute>

</define>

#### Footnote Reference ID

The footnote reference ID is used by references to footnotes to identify the footnote that is referenced.

#### Note Citation Element

The <text:note-citation> element contains the formatted note citation element, either as a formatted number or a string.

#### Note Label

Note citation elements can be labeled or numbered. If they are numbered, the number is chosen and formatted automatically according to the notes configuration element. If they are labeled, the user must supply a label for every note he/she inserts into the document. This label is stored in the text:label attribute of the <text:note-citation> element.

#### Note Body

The <text:note-body> element contains the actual content of the footnote. It does not have any attributes.

The schema allows for the inclusion of notes into the note body. While this may be reasonable for some future note types, it is not reasonable for footnotes and endnotes. Conforming applications may or may not support such nested notes.

#### Footnote example

<text:p>

This paragraph contains a footnote

<text:note text:note-class="footnote" text:id="ftn001">

<text:note-citation>1</text:note-citation>

<text:note-body>

<text:p>

This footnote has a generated sequence number

</text:p>

</text:note-body>

</text:note>

.

</text:p>

<text:p>

This paragraph contains a footnote

<text:note text:note-class="footnote" text:id="ftn002">

<text:note-citation text:label="\*">\*</text:note-citation>

<text:note-body>

<text:p>

This footnote has a fixed citation

</text:p>

</text:note-body>

</text:note>

, too

</text:p>

## Ruby

A ruby is additional text that is displayed above or below some base text. The purpose of ruby is to annotate the base text or provide information about its pronunciation.

There are two elements that can be contained in the <text:ruby> element:

* Ruby base
* Ruby text

The <text:ruby-base> element contains the text that is to be annotated. It contains any paragraph element content, like text spans. The element's text:style-name attribute references a ruby style that specifies further formatting attributes of the ruby. See section 14.8.4 for details.

The <text:ruby-text > element contains the annotation text. It may contain only plain text. The element's text:style-name attribute references a text style that specifies further formatting attributes used for the text.

<define name="paragraph-content" combine="choice">

<element name="text:ruby">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<element name="text:ruby-base">

<ref name="paragraph-content"/>

</element>

<element name="text:ruby-text">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<text/>

</element>

</element>

</define>

## Text Annotation

The OpenDocument format allows annotation to appear within a paragraph element. See section 12.1 for details on annotations.

<define name="paragraph-content" combine="choice">

<ref name="office-annotation"/>

</define>

## Index Marks

Index marks are used to mark text areas for inclusion into text indices. They are similar in structure to bookmarks and references. They are discussed in detail section 7.1, together with text indices.

## Change Tracking and Change Marks

Paragraphs may also contain change tracking marks. These have already been explained in the chapter on change tracking (section 4.6), and are referenced here for completeness.

<define name="paragraph-content" combine="choice">

<ref name="change-marks"/>

</define>

## Inline graphics and text-boxes

Within text documents, images, embedded objects and other drawing objects may be anchored to a paragraph, to a character, or as a character. If they are anchored to a paragraph, they appear within a paragraph at an arbitrary position. If they are anchored to or as a character, they appear within a paragraph at exactly the character position they are anchored to or as. See section 9.2 for details on drawing objects, and section 9.2.16 for their anchoring.

<define name="paragraph-content" combine="choice">

<choice>

<ref name="shape"/>

<ref name="draw-a"/>

</choice>

</define>

1. Text Fields

OpenDocument text documents or OpenDocument text content embedded in other types of documents can contain variable text elements called fields. There are several different types of field, each of which implements a different type of variable text element. Fields are most commonly used for:

* Page numbers  
  A page number field displays the number of the page it appears on. This field is useful for footers. For every page on which the footer appears, the field assumes the current page number so that all pages are numbered correctly.
* Creation dates  
  A creation date field displays the date on which the current document was created. This field is useful for document templates. Every document created using the template contains the date when it was created.
* Number ranges  
  A number range field allows the user to number certain elements, for example, images or tables. A number range field displays its own position in relation to the other number range fields for the same range. Therefore, if an image and its associated number range field are moved within a document, the fields are automatically updated to reflect the new order.

This section describes how fields are represented in the OpenDocument file format.

## Common Characteristics of Field Elements

Each field type is represented by a corresponding element type. A field in a document is encoded as a single element of the appropriate type. The content of the element is the textual representation of the current field value as it would be displayed or printed. Therefore, ignoring all field elements and displaying only the textual content of the elements provides an approximate text-only version of the document.

The value of a field is usually stored in an attribute. It is necessary to store the value so that the presentation of the field can be recomputed if necessary, for example, if the user decides to change the formatting style of the field. It is also necessary to store the presentation style of the element content, to facilitate easy processing of the XML document. For example, if complete processing of a field is impossible or undesirable, the application can ignore the field and use only the content in this situation. For string values, if the value is identical to the presentation, the value attribute is omitted to avoid duplicate storage of information.

For fields that can store different types of content, for example, numbers, strings, or dates, a value type is stored in addition to the actual value. The value and value type attributes are explained later in section 6.7.1. If more information is needed to restore a field, it is stored in additional attributes.

The most common attributes of field elements are:

* Fixed fields  
  Many fields have a variant where the content does not change after the initial value is assigned. These fields are generally marked by the attribute text:fixed. See section 6.7.2 for more information on this attribute.
* Formatting style  
  Several field types, particularly those representing number, date, or time data, contain a formatting style. In the OpenDocument format, this formatting style is represented by a style:data-style-name attribute. Since the user can change the presentation style for fields, applications must be able to recompute a new representation of the field content at any time. See section 6.7.7 for more information on this attribute.

## Document Fields

OpenDocument fields can display information about the current document or about a specific part of the current document, such as the author, the current page number, or the document creation date. These fields are collectively referred to as document fields.

Document fields are often fixed. A field can be marked fixed to indicate that its content is preserved, rather than re-evaluated, when the document is edited. For example, a date field shows the current date. If the date field is marked fixed, the value of the field is preserved during subsequent edits and always reflects the original date on which the field was inserted into the document. If the field is not marked fixed, its value changes whenever the document is edited. In the same way, the author field can show the original author or the last author of a document, depending on whether the field is marked fixed or not.

The group of document fields includes:

* Date and time fields
* Page number fields
* Sender and author fields
* Chapter fields
* File name fields
* Document template fields

### Date Fields

Date fields display the current date. The date can be adjusted to display a date other than the current date. For example, the date can be changed on a document that was edited late at night so that it displays the date of the following day or several days later.

This element contains the presentation of the date field value, depending on the data style specified. The default date is the current date. The value of this element can be preserved using the text:fixed attribute described in section 6.7.2.

<define name="paragraph-content" combine="choice">

<element name="text:date">

<ref name="text-date-attlist"/>

<text/>

</element>

</define>

The attributes that may be associated with the <text:date> element are:

* Date value
* Date adjustment
* Fixed (see section 6.7.2)
* Formatting style (see section 6.7.7). The formatting style must be a date data style, see section 14.7 for more information.

<define name="text-date-attlist" combine="interleave">

<interleave>

<ref name="common-field-fixed-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

</interleave>

</define>

#### Date Value

The text:date-value attribute specifies a particular date value. For example, if the date field is marked fixed, this attribute can be used to specify the date on which the field was marked as fixed. This attribute can also be used to specify a future date. Some applications support date and time in addition to date-only values.

The date value should conform with the date formats described in §3.2.7 and §3.2.9 of [xmlschema-2]. If no value is specified, the current date is assumed, even if the field is marked fixed.

<define name="text-date-attlist" combine="interleave">

<optional>

<attribute name="text:date-value">

<ref name="dateOrDateTime"/>

</attribute>

</optional>

</define>

#### Date Adjustment

The value of a date field can be adjusted by a certain time period, which is specified using the text:date-adjust attribute. If the time period is negative, it gets subtracted from the value of the date field, yielding a date before the current date.

The value of this attribute must conform to the time period format described in §3.2.6 of [xmlschema-2]. The value can be preceded by an optional minus sign to indicate a negative time duration.

<define name="text-date-attlist" combine="interleave">

<optional>

<attribute name="text:date-adjust">

<ref name="duration"/>

</attribute>

</optional>

</define>

### Time Fields

Time fields display the current time. They are very similar to the date fields described in section 6.2.1, supporting the same attributes except that for time fields, they are called text:time-value and text:time-adjust attributes.

This element contains the presentation of the time field value, depending on the data style specified. The default time is the current time. The value of this element can be preserved using the text:fixed attribute described in section 6.7.2.

<define name="paragraph-content" combine="choice">

<element name="text:time">

<ref name="text-time-attlist"/>

<text/>

</element>

</define>

The attributes that may be associated with the <text:time> element are:

* Time value
* Time adjustment
* Fixed (see section 6.7.2)
* Formatting style (see section 6.7.7). The formatting style must be a time data style, see section 14.7 for more information.

<define name="text-time-attlist" combine="interleave">

<interleave>

<ref name="common-field-fixed-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

</interleave>

</define>

#### Time Value

The text:time-value attribute records the time at which the document was last edited.

Some applications support date and time in addition to date-only values.

The value of this attribute must conform with either the “dateTime” or “time” data types described in §3.2.7 and §3.2.8 of [xmlschema-2]. If no value is specified, the current time is assumed, even if the field is marked fixed.

<define name="text-time-attlist" combine="interleave">

<optional>

<attribute name="text:time-value">

<ref name="timeOrDateTime"/>

</attribute>

</optional>

</define>

#### Time Adjustment

The value of a time field can be adjusted by a certain time period, which is specified using the text:time-adjust attribute.

The value of this attribute must conform to the time period format described in §3.2.6 of [xmlschema-2]. The value can be preceded by an optional minus sign to indicate a negative time duration. Positive values adjust the time to a time in the future, while negative values adjust the time to a time in the past. The duration is truncated to full minutes.

<define name="text-time-attlist" combine="interleave">

<optional>

<attribute name="text:time-adjust">

<ref name="duration"/>

</attribute>

</optional>

</define>

**Example:** **Time adjust attributes and their effects**

If the attribute text:time-adjust="PTM15", the time field displays a time which is 15 minutes later than the actual time specified by the time field value.

If the attribute text:time-adjust="-PTH1", the time field displays a time which is one hour before the actual time specified by the time field value.

### Page Number Fields

Page number fields display the current page number. These fields are particularly useful in headers and footers. E.g., if a page number field is inserted into a footer, the current page number is displayed on every page on which the footer appears.

The attributes that may be associated with the <text:page-number> element are:

* Page adjustment
* Display previous or following page numbers
* Fixed (see section 6.7.2)
* Formatting style (see section 6.7.8)   
  Page numbers can be formatted according to the number format described in section 2.9. If a number style is not specified, the page numbers are formatted according to the number style defined in the current page style.

<define name="paragraph-content" combine="choice">

<element name="text:page-number">

<ref name="text-page-number-attlist"/>

<text/>

</element>

</define>

<define name="text-page-number-attlist" combine="interleave">

<interleave>

<ref name="common-field-num-format-attlist"/>

<ref name="common-field-fixed-attlist"/>

</interleave>

</define>

**Note:** To display the total number of pages in a document, use the <text:page-count/> field described in section 6.4.17.

#### Page Adjustment

The value of a page number field can be adjusted by a specified number, allowing the display of page numbers of following or preceding pages. The adjustment amount is specified using the text:page-adjust attribute. When this attribute is used, the application:

1. Adds the value of the attribute to the current page number.
2. Checks to see if the resulting page exists.
3. If the page exists, the number of that page is displayed.
4. If the page does not exist, the value of the page number field remains empty and no number is displayed.

<define name="text-page-number-attlist" combine="interleave">

<optional>

<attribute name="text:page-adjust">

<ref name="integer"/>

</attribute>

</optional>

</define>

#### Display Previous or Following Page Numbers

The text:select-page attribute is used to display the number of the previous or the following page rather than the number of the current page.

<define name="text-page-number-attlist" combine="interleave">

<optional>

<attribute name="text:select-page">

<choice>

<value>previous</value>

<value>current</value>

<value>next</value>

</choice>

</attribute>

</optional>

</define>

**Note:** To display the current page number on all pages except the first or last page, use a combination of the text:select page and text:page adjust attributes.

**Example: Displaying the current page number on all pages except the first page**

<text:page-number text:select-page="previous"  
 text:page-adjust="1"  
 style:num-format="1"/>

### Page Continuation Text

In some publications, a continuation reminder is printed at the bottom of the page in addition to the page number. To include a continuation reminder, use the <text:page-continuation> element.

<define name="paragraph-content" combine="choice">

<element name="text:page-continuation">

<ref name="text-page-continuation-attlist"/>

<text/>

</element>

</define>

The attributes associated with the <text:page-continuation> element are:

* Previous or following page
* String value

#### Previous or Following Page

This attribute specifies whether to check for a previous or next page and if the page exists, the continuation text is printed.

<define name="text-page-continuation-attlist" combine="interleave">

<attribute name="text:select-page">

<choice>

<value>previous</value>

<value>next</value>

</choice>

</attribute>

</define>

#### String Value

This attribute specifies the continuation text to display. If this attribute is omitted, the element content is used.

<define name="text-page-continuation-attlist" combine="interleave">

<optional>

<attribute name="text:string-value">

<ref name="string"/>

</attribute>

</optional>

</define>

### Sender Fields

There are several fields which contain information about the sender of the current document, for example, name and email address. The information about the sender is taken from the OpenDocument user information dialog. If a sender field is marked fixed using the text:fixed attribute, the original sender information in the sender fields is preserved. (cf. section 6.7.2) Otherwise, the information is updated each time the file is edited, causing the fields to change value when the document is edited by a different user.

#### First Name

This element represents the first name of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-firstname">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Last Name

This element represents the last name of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-lastname">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Initials

This element represents the initials of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-initials">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Title

This element represents the title of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-title">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Position

This element represents the position of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-position">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Email Address

This element represents the email address of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-email">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Private Telephone Number

This element represents the private telephone number of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-phone-private">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Fax Number

This element represents the facsimile number of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-fax">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Company Name

This element represents the name of the company that employs the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-company">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Office Telephone Number

This element represents the office telephone number of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-phone-work">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Street

This element represents the street name of the address of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-street">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### City

This element represents the city name of the address of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-city">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Postal Code

This element represents the postal code of the address of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-postal-code">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Country

This element represents the country of the address of the sender.

<define name="paragraph-content" combine="choice">

<element name="text:sender-country">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### State or Province

This element represents the state or province of the address of the sender, if applicable.

<define name="paragraph-content" combine="choice">

<element name="text:sender-state-or-province">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

### Author Fields

There are two elements available to display the author of a document. One element displays the full name of the author and the other element displays the initials of the author.

The value of author fields can be fixed using the text:fixed attribute. Marking an author field as fixed preserves the original field content. Otherwise, the field content changes each time the document is updated, to reflect the last author of the document.

#### Name of the Author

This element represents the full name of the author.

<define name="paragraph-content" combine="choice">

<element name="text:author-name">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

#### Initials of the Author

This element represents the initials of the author.

<define name="paragraph-content" combine="choice">

<element name="text:author-initials">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

### Chapter Fields

Chapter fields display one of the following:

* The name of the current chapter
* The number of the current chapter
* Both the name and number of the current chapter

If the chapter field is placed inside a header or footer, it displays the current chapter name or number on every page.

<define name="paragraph-content" combine="choice">

<element name="text:chapter">

<ref name="text-chapter-attlist"/>

<text/>

</element>

</define>

The attributes that may be associated with the <text:chapter> element are:

* Display
* Outline level

#### Display

The text:display attribute specifies the information that the chapter field should display.

<define name="text-chapter-attlist" combine="interleave">

<attribute name="text:display">

<choice>

<value>name</value>

<value>number</value>

<value>number-and-name</value>

<value>plain-number-and-name</value>

<value>plain-number</value>

</choice>

</attribute>

</define>

**Example:** If the current chapter number is 2.4, the chapter title is Working with Tables, the prefix is [, and suffix is ], the possible display options and results are as follows:

| Value of text:display attribute | Field content displayed |
| --- | --- |
| number | [2.4] |
| name | Working with Tables |
| number-and-name | [2.4] Working with Tables |
| plain-number | 2.4 |
| plain-number-and-name | 2.4 Working with Tables |

#### Outline Level

This attribute is used to specify the outline level to use. The chapter field displays the chapter number or title up to the specified outline level.

<define name="text-chapter-attlist" combine="interleave">

<attribute name="text:outline-level">

<ref name="nonNegativeInteger"/>

</attribute>

</define>

### File Name Fields

File name fields display the name of the file that is currently being edited.

The attributes that may be associated with the <text:file-name> element are:

* Display
* Fixed

<define name="paragraph-content" combine="choice">

<element name="text:file-name">

<ref name="text-file-name-attlist"/>

<text/>

</element>

</define>

#### Display

The text:display attribute specifies how much of the file name to display. The following display options are allowed:

* The full file name including the path and the extension
* The file path only
* The file name only
* The file name and the extension

The filename might be an IRI, either because an IRI has been used to retrieve the file, or the application internally uses IRIs and therefore converts even system specific paths into an IRI. If this is the case, and if the path, the name or the extension cannot be evaluated from the IRI, then the IRI should be displayed unmodified.

<define name="text-file-name-attlist" combine="interleave">

<optional>

<attribute name="text:display">

<choice>

<value>full</value>

<value>path</value>

<value>name</value>

<value>name-and-extension</value>

</choice>

</attribute>

</optional>

</define>

#### Fixed File Name Fields

If a file name field is fixed, its value does not change when the file is edited.

<define name="text-file-name-attlist" combine="interleave">

<ref name="common-field-fixed-attlist"/>

</define>

### Document Template Name Fields

The document template name field displays information about the document template in use, such as the template title or the file name.

The only attribute that may be associated with the <text:template-name> element is:

* Display

<define name="paragraph-content" combine="choice">

<element name="text:template-name">

<ref name="text-template-name-attlist"/>

<text/>

</element>

</define>

#### Display

This attribute specifies which information about the document template to display. The following display options are allowed:

* The full file name including the path and the extension
* The file path only
* The file name only
* The file name and the extension
* The title
* The area of the document template

The latter two values can be used for template dialogs. The values are a superset of the display values available for the <text:file-name> element.

<define name="text-template-name-attlist">

<optional>

<attribute name="text:display">

<choice>

<value>full</value>

<value>path</value>

<value>name</value>

<value>name-and-extension</value>

<value>area</value>

<value>title</value>

</choice>

</attribute>

</optional>

</define>

### Sheet Name Fields

For Spreadsheet documents, sheet name fields display the name of the sheet that is currently being edited.

<define name="paragraph-content" combine="choice">

<element name="text:sheet-name">

<text/>

</element>

</define>

## Variable Fields

OpenDocument text documents can contain variables, which are processed or displayed using variable fields. A variable is a name/value pair. The variable name is used throughout the document to identify a particular variable, and therefore variable names cannot be reused for different types of variables. Most variable fields support different value types, such as numbers, dates, strings, and so on. In the OpenDocument file format, a variable must be declared at the beginning of a document.

There are three types of variables:

* **Simple variables**

Simple variables, usually called variables, can take different values at different positions throughout a document. Simple variables can be set using either setter or input fields. Setter fields contain an expression, which is used to compute the new value of the variable. Input fields prompt the user for the new value. Simple variables can be used to display different text in recurring elements, such as headers or footers.

* **User variables**

User variables have the same value throughout a document. If a user variable is set anywhere within the document, all fields in the document that display the user variable have the same value. In the office application user interface, a user variable can be set at any occurrence of a user field, or by using user variable input fields. In the OpenDocument file format, the value of the user variable can only be set after the variable is declared.

* **Sequence variables**

Sequence variables are used to number certain items in an OpenDocument text document, for example, images or tables.

Expression and text input fields are also variable fields, but they are not associated with any particular variables. Since their functionality is closely related to that of the variable fields, they are also described in this section of the manual.

Variables must be declared before they can be used. The variable declarations are collected in container elements for the particular variable type. The OpenDocument code for declaring variables is described in sections 6.3.1, 6.3.5 and 6.3.8.

### Declaring Simple Variables

Simple variables are declared using <text:variable-decl> elements. The declaration specifies the name and the value type of the variable.

To specify the name and value type of the simple variable, the following attributes are attached to the <text:variable-decl> element:

* text:name

The name of the variable must be unique. The name cannot already be used for any other type of variable. See section 6.7.3 for information on using this attribute.

* office:value-type

See section 6.7.1 for information on using this attribute.

<define name="text-variable-decl">

<element name="text:variable-decl">

<ref name="common-field-name-attlist"/>

<ref name="common-value-type-attlist"/>

</element>

</define>

### Setting Simple Variables

Simple variables can be set using variable setter elements. This element contains the presentation of the value of the variable, which can be empty if the text:display attribute is set to none.

The attributes that may be associated with the <text:variable-set> element are:

* text:name

This attribute specifies the name of the variable to set. It must match the name of a variable that has already been declared. See section 6.7.3 for information on using this attribute.

* text:formula

This attribute contains the formula to compute the value of the variable field. If the formula equals the content of the field element, this attribute can be omitted. See section 6.7.6 for information on using this attribute.

* office:value-type and the appropriate value attribute

See section 6.7.1 for information on using these attributes.

**Note:** A simple variable should not contain different value types at different places in a document. However, an implementation may allow the use of different value types for different instances of the same variable. In the case of the numeric value types float, percentage, and currency, the value is automatically converted to the different value type. For value types that are stored internally as numbers, such as date, time, and boolean types, the values are reinterpreted as numbers of the respective types. If a variable is used for both string and non-string types, the behavior is undefined, therefore this practice is not recommended.

* text:display

This attribute can be used to specify whether or not to display the value of the <text:variable-set> element. If the text:display attribute is set to value, the value of the variable is displayed. If the attribute is set to none, the value is not displayed. See section 6.7.5 for information on using this attribute.

* style:data-style-name

This attribute specifies the data style to use to format a numeric, Boolean, or date/time variable. If a data style is not specified, a standard data style is used. See section 6.7.7 for information on using this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:variable-set">

<interleave>

<ref name="common-field-name-attlist"/>

<ref name="common-field-formula-attlist"/>

<ref name="common-value-and-type-attlist"/>

<ref name="common-field-display-value-none-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

</interleave>

<text/>

</element>

</define>

### Displaying Simple Variables

The <text:variable-get> element reads and displays the value of a simple variable. The value of this element is the value of the last preceding <text:variable-set> element with an identical text:name attribute. The element determines how the value of the variable is presented, in accordance with the chosen formatting style.

The attributes that may be associated with the <text:variable-get> element are:

* text:name

This attribute specifies the name of the variable to display. The name must match the name of a preceding <text:variable-del> element. See section 6.7.3 for information on using this attribute.

* text:display

This attribute can be used to specify whether to display the formula for a simple variable or the computed value of the variable. See section 6.7.5 for information on using this attribute.

* style:data-style-name

This attribute specifies the data style to use to format a numeric, Boolean, or date/time variable. If a data style is not specified, a standard data style is used. See section 6.7.7 for information on using this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:variable-get">

<interleave>

<ref name="common-field-name-attlist"/>

<ref name="common-field-display-value-formula-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

</interleave>

<text/>

</element>

</define>

### Simple Variable Input Fields

As an alternative to setting simple variables using formulas in variable setter elements, the user can be prompted for variable values. To do this, use the <text:variable-input> element. This element contains the presentation of the variable's value according to the chosen formatting style. The presentation can be empty if the text:display attribute is set to none.

The attributes that may be associated with the <text:variable-input> element are:

* text:name

This attribute specifies the name of the variable to display. It must match the name of a variable that was already declared. See section 6.7.3 for information on using this attribute.

* text:description

This optional attribute contains a brief message that is presented to users when they are prompted for input. The message should give users enough information about the variable or the use of the value within the document to enable them to choose an appropriate value. See section 6.7.4 for information on using this attribute.

* office:value-type and the appropriate value attribute

See section 6.7.1 for information on using these attributes.

* text:display

This attribute can be used to specify whether to display or hide the value of the variable through the variable input field. See section 6.7.5 for information on using this attribute.

* style:data-style-name

This attribute specifies the data style to use to format a numeric, Boolean, or date/time variable. If a data style is not specified, a standard data style is used. See section 6.7.7 for information on using this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:variable-input">

<interleave>

<ref name="common-field-name-attlist"/>

<ref name="common-field-description-attlist"/>

<ref name="common-value-type-attlist"/>

<ref name="common-field-display-value-none-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

</interleave>

<text/>

</element>

</define>

### Declaring User Variables

User variables contain values that are displayed using appropriate fields. Unlike simple variables, user variables have the same value throughout a document. For this reason, the value of user variables is stored in the variable declaration itself.

The attributes that may be associated with the <text:user-field-del> element are:

* text:name

This attribute specifies the name of the variable to be declared. The name must be unique. It cannot already be used for any other type of variable including simple and sequence variables. See section 6.7.3 for information on using this attribute.

* text:formula

This attribute contains the formula to compute the value of the user variable field. If the formula is the same as the content of the field element, this attribute can be omitted. See section 6.7.6 for information on using this attribute.

* office:value-type and the appropriate value attribute

See section 6.7.1 for information on using these attributes.

<define name="text-user-field-decl">

<element name="text:user-field-decl">

<ref name="common-field-name-attlist"/>

<optional>

<ref name="common-field-formula-attlist"/>

</optional>

<ref name="common-value-and-type-attlist"/>

</element>

</define>

### Displaying User Variables

The content of user variables can be displayed using <text:user-field-get> elements.

The attributes that may be associated with the <text:user-field-get> element are:

* text:name

This attribute specifies the name of the variable to display. The name must match the name of a preceding <text:user-field-del> element. See section 6.7.3 for information on using this attribute.

* text:display

This attribute can be used to specify whether to:

* + Display the formula used to compute the value of the user variable.
  + Display the value of the user variable.
  + Hide the user variable fields.
    - See section 6.7.5 for information on using this attribute.

**Note:** Since the office application user interfaces usually allow users to edit a user field variable by clicking on any user field, a hidden <text:user-field-get> element can be used as an anchor to allow easy access to a particular user field variable.

* style:data-style-name

This attribute specifies the data style to use to format a numeric, Boolean, or date/time variable. If a data style is not specified, a standard data style is used. See section 6.7.7 for information on using this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:user-field-get">

<interleave>

<ref name="common-field-name-attlist"/>

<ref name="common-field-display-value-formula-none-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

</interleave>

<text/>

</element>

</define>

### User Variable Input Fields

An alternative method of setting user variables is to use input fields, similar to the input fields for simple variables. A user variable can be set in this way using the <text:user-field-input> element. Since the value of a user field variable is stored in the <text:user-field-del> element, the <text:user-field-input> element does not contain the value and value type attributes from the <text:variable-input> field.

The presentation can be empty if the text:display attribute is set to none.

The attributes that may be associated with the <text:user-field-input> element are:

* text:name

This attribute specifies the name of the variable to set. It must match the name of a variable that has already been declared. See section 6.7.3 for information on using this attribute.

* text:description

This optional attribute contains a brief message that is presented to users when they are prompted for input. The message should give users enough information about the variable or the use of the value within the document, to enable them to choose an appropriate value. See section 6.7.4 for information on using this attribute.

* style:data-style-name

This attribute specifies the data style to use to format a numeric, Boolean, or date/time variable. If a data style is not specified, a standard data style is used. See section 6.7.7 for information on using this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:user-field-input">

<interleave>

<ref name="common-field-name-attlist"/>

<ref name="common-field-description-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

</interleave>

<text/>

</element>

</define>

### Declaring Sequence Variables

Sequence variables are used to number items within an OpenDocument text document. Sequence variables are most commonly used for sequential numbering. However, expression formulas can be included in sequence fields to support more advanced sequences. See section 6.3.9 for more information on Using Sequence Fields and their uses.

Sequence variables are declared using the <text:sequence-del> element.

To facilitate chapter-specific numbering, attributes can be attached to a sequence variable to specify a chapter level and a separation character. The attributes that may be associated with the <text:sequence-del> element are:

* text:name

This attribute specifies the name of the variable to be declared. The name must be unique. It cannot already be used for any other type of variable including simple and user variables. See section 6.7.3 for information on using this attribute.

* text:display-outline-level

See section 6.3.8: for information about this attribute.

* text:separation-character

See section 6.3.8: for information about this attribute.

<define name="text-sequence-decl">

<element name="text:sequence-decl">

<ref name="text-sequence-decl-attlist"/>

</element>

</define>

<define name="text-sequence-decl-attlist" combine="interleave">

<ref name="common-field-name-attlist"/>

</define>

#### Outline Level

Sequences can be numbered by chapter. To use this feature, use the text:display-outline-level attribute to specify an outline level that determines which chapters to reference for the chapter-specific numbering. All chapters that are at or below the specified outline level reset the value of the sequence to zero, the default value. Also, the chapter number of the last chapter at or below the specified outline level is prefixed to the sequence number. Choosing an outline level of zero results in a straight sequence of all sequence elements for that sequence variable.

<define name="text-sequence-decl-attlist" combine="interleave">

<attribute name="text:display-outline-level">

<ref name="nonNegativeInteger"/>

</attribute>

</define>

#### Separation Character

If sequences are numbered by chapter, this attribute is used to choose a character to separate the chapter number from the sequence number.

If the value of the text:display-outline-level attribute is a non-zero value, a separation character may be specified. The default separation character is ".".Otherwise, if the value of text:display-outline-level is zero, this attribute must be omitted.

<define name="text-sequence-decl-attlist" combine="interleave">

<optional>

<attribute name="text:separation-character">

<ref name="character"/>

</attribute>

</optional>

</define>

**Example: Sequence variable**

The sequence variable 3.7.36#5 with a value of 5 is declared using:

| Attribute | Value |
| --- | --- |
| text:display-outline-level | 3 |
| text:separation-character | # |

### Using Sequence Fields

Once a sequence variable is declared, it can be used in sequence fields throughout the document. Most sequence fields simply increment and display the sequence variable. However, sequence fields can also assume a new start value at any given position in a document. This start value is computed using a formula which is contained in the sequence field. If a sequence field without a start value is added, the office application software automatically inserts an expression of the type variable+1.

Sequence fields are most commonly used for simple counting sequences. However, the ability to provide arbitrary expressions supports more complex sequences. To form a sequence of even numbers, all sequence elements for that particular variable need to contain a formula incrementing the value by two, for example, variable+2. A sequence with a starting value of 1 and all subsequent elements using the formula variable\*2 yields all powers of two. Since different sequence elements for the same sequence variable may contain different formulas, complex sequences may be constructed.

The attributes that may be associated with the <text:sequence> element are:

* text:name

This attribute specifies the name of the variable that the field is to display. It must match the name of a sequence variable that was already declared. See section 6.7.3 for information on using this attribute.

* text:formula

This optional attribute contains a formula to compute the value of the sequence field. If this attribute is omitted, an expression containing the content of the element is used. See section 6.7.6 for information on using this attribute.

* style:num-format and style:num-letter-sync

These attributes specify the numbering style to use. If a numbering style is not specified, the numbering style is inherited from the page style. See section 6.7.8 for information on these attributes.

* text:ref-name

See the section 6.3.9: for more information about this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:sequence">

<interleave>

<ref name="common-field-name-attlist"/>

<ref name="common-field-formula-attlist"/>

<ref name="common-field-num-format-attlist"/>

<ref name="text-sequence-ref-name"/>

</interleave>

<text/>

</element>

</define>

#### Reference Name

Sequence fields can be the target of references, as implemented using reference fields. See section 6.6.5 for more information about reference fields. To enable a reference field to identify a particular sequence field, the sequence field must contain an additional attribute containing a name. No two sequence fields can have the same reference name.

If the sequence field is not the target of a reference, this attribute can be omitted.

<define name="text-sequence-ref-name">

<optional>

<attribute name="text:ref-name">

<ref name="string"/>

</attribute>

</optional>

</define>

### Expression Fields

Expression fields contain expressions that are evaluated and the resulting value is displayed. The value of the expression is formatted according to the chosen formatting style.

The attributes that may be associated with the <text:expression> element are:

* text:formula

This attribute contains the actual expression used to compute the value of the expression field. See section 6.7.6 for information on using this attribute.

* office:value-type and the appropriate value attribute

See section 6.7.1 for information on using these attributes.

* text:display

Use this attribute to specify one of the following:

* + To display the value of the field.
  + To display the formula used to compute the value.

See section 6.7.5 for information on using this attribute.

* style:data-style-name

This attribute specifies the data style to use to format a numeric, Boolean, or date/time variable. If a data style is not specified, a standard data style is used. See section 6.7.7 for information on using this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:expression">

<interleave>

<ref name="common-field-formula-attlist"/>

<optional>

<ref name="common-value-and-type-attlist"/>

</optional>

<ref name="common-field-display-value-formula-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

</interleave>

<text/>

</element>

</define>

### Text Input Fields

A text input field is a variable field. From the point of view of the user interface, a text input field is similar to the <text:variable-input> and <text:user-field-input> fields. However, the text input field does not change the value of any variables.

The only attribute that may be associated with the <text:text-input> element is:

* text:description

This attribute contains a brief message that is presented to users when they are prompted for input. The message should give users enough information about the purpose of the field and how it is used within the document, to enable them to choose an appropriate value. See section 6.7.4 for information on using this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:text-input">

<ref name="common-field-description-attlist"/>

<text/>

</element>

</define>

## Metadata Fields

Metadata fields display meta information about the document, such as, the document creation date or the time at which the document was last printed. The names of the metadata field elements correspond to the metadata elements described in Chapter 3.

All metadata field elements can be marked as fixed using the text:fixed attribute. (Cf. section 6.7.2)

Several metadata fields display a date or a time. The elements for these fields require an associated text:date-value or a text:time-value attribute, and optionally, they can also have a style:data-style-name attribute. See section 6.7.1 for more information on these attributes.

### Initial Creator

This element represents the name of the author who created the original document.

<define name="paragraph-content" combine="choice">

<element name="text:initial-creator">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

### Document Creation Date

This element represents the date on which the document was created.

<define name="paragraph-content" combine="choice">

<element name="text:creation-date">

<interleave>

<ref name="common-field-fixed-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

<optional>

<attribute name="text:date-value">

<ref name="dateOrDateTime"/>

</attribute>

</optional>

</interleave>

<text/>

</element>

</define>

### Document Creation Time

This element represents the time at which the document was created.

<define name="paragraph-content" combine="choice">

<element name="text:creation-time">

<interleave>

<ref name="common-field-fixed-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

<optional>

<attribute name="text:time-value">

<ref name="timeOrDateTime"/>

</attribute>

</optional>

</interleave>

<text/>

</element>

</define>

### Document Description

This element contains a brief description of the document.

<define name="paragraph-content" combine="choice">

<element name="text:description">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

### User-Defined Document Information

This element contains user-defined information about the document. It displays the information provided within a <meta:user-defined> element that has the same name.

<define name="paragraph-content" combine="choice">

<element name="text:user-defined">

<interleave>

<ref name="common-field-fixed-attlist"/>

<attribute name="text:name">

<ref name="string"/>

</attribute>

<ref name="common-field-data-style-name-attlist"/>

<optional>

<attribute name="office:value">

<ref name="double"/>

</attribute>

</optional>

<optional>

<attribute name="office:date-value">

<ref name="dateOrDateTime"/>

</attribute>

</optional>

<optional>

<attribute name="office:time-value">

<ref name="duration"/>

</attribute>

</optional>

<optional>

<attribute name="office:boolean-value">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="office:string-value">

<ref name="string"/>

</attribute>

</optional>

</interleave>

<text/>

</element>

</define>

### Print Time

This element represents the time at which the document was last printed.

<define name="paragraph-content" combine="choice">

<element name="text:print-time">

<interleave>

<ref name="common-field-fixed-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

<optional>

<attribute name="text:time-value">

<ref name="time"/>

</attribute>

</optional>

</interleave>

<text/>

</element>

</define>

### Print Date

This element represents the date on which the document was last printed.

<define name="paragraph-content" combine="choice">

<element name="text:print-date">

<interleave>

<ref name="common-field-fixed-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

<optional>

<attribute name="text:date-value">

<ref name="date"/>

</attribute>

</optional>

</interleave>

<text/>

</element>

</define>

### Printed By

This element represents name of the last person who printed the document.

<define name="paragraph-content" combine="choice">

<element name="text:printed-by">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

### Document Title

This element represents the title of the document.

<define name="paragraph-content" combine="choice">

<element name="text:title">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

### Document Subject

This element represents the subject of the document.

<define name="paragraph-content" combine="choice">

<element name="text:subject">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

### Document Keywords

This element contains a list of keywords used to describe the document.

<define name="paragraph-content" combine="choice">

<element name="text:keywords">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

### Document Revision Number

This element contains the document revision number. When the document is created, the revision number is set to 1. Each time the document is saved, the document revision number is incremented.

<define name="paragraph-content" combine="choice">

<element name="text:editing-cycles">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

**Note:** Since the <text:editing-cycles> field can not be formatted, the revision number can be read from the element content. Therefore, no extra attribute is needed.

### Document Edit Duration

Every time a document is edited, the office application records the duration between the time the document is opened and the time the document is closed. It then adds the duration to an internal counter, thereby keeping track of the total time that has been spent editing the document.

<define name="paragraph-content" combine="choice">

<element name="text:editing-duration">

<interleave>

<ref name="common-field-fixed-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

<optional>

<attribute name="text:duration">

<ref name="duration"/>

</attribute>

</optional>

</interleave>

<text/>

</element>

</define>

### Document Modification Time

This element represents the time at which the document was last modified.

This element displays the information from the <dc:date> element. The name was chosen to avoid confusion with <text:date> fields.

<define name="paragraph-content" combine="choice">

<element name="text:modification-time">

<interleave>

<ref name="common-field-fixed-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

<optional>

<attribute name="text:time-value">

<ref name="time"/>

</attribute>

</optional>

</interleave>

<text/>

</element>

</define>

### Document Modification Date

This element represents the date on which the document was last modified.

This element displays the information from the <dc:date> element. The name was chosen to avoid confusion with <text:date> fields.

<define name="paragraph-content" combine="choice">

<element name="text:modification-date">

<interleave>

<ref name="common-field-fixed-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

<optional>

<attribute name="text:date-value">

<ref name="date"/>

</attribute>

</optional>

</interleave>

<text/>

</element>

</define>

### Document Modified By

This element represents the name of the person who last modified the document.

<define name="paragraph-content" combine="choice">

<element name="text:creator">

<ref name="common-field-fixed-attlist"/>

<text/>

</element>

</define>

### Document Statistics Fields

These fields display how many objects of a certain type a document contains. They can be used to display the number of

* pages,
* paragraphs,
* words,
* characters,
* tables,
* images, or
* embedded objects.

<define name="paragraph-content" combine="choice">

<element>

<choice>

<name>text:page-count</name>

<name>text:paragraph-count</name>

<name>text:word-count</name>

<name>text:character-count</name>

<name>text:table-count</name>

<name>text:image-count</name>

<name>text:object-count</name>

</choice>

<ref name="common-field-num-format-attlist"/>

<text/>

</element>

</define>

## Database Fields

Documents can reference databases and display database information as text content. To display database information, the OpenDocument schema uses a group of text fields, collectively called database fields. Office applications may use database tables from SQL servers, therefore database fields can be used to access any SQL database, provided that the appropriate drivers are available.

A database may contain the following components:

* Tables, which store the actual data.
* Queries, which extract a subset of data from one or more tables.
* Forms, which present the data.
* Reports, which summarize the database content.

Database forms and reports are not relevant to text content, therefore they are not discussed in this chapter. From the point of view of embedding database information in OpenDocument text documents, queries and tables are considered the same. Therefore for the remainder of this section, the phrase *database table* refers to both database tables and database queries.

Database fields alone do not retrieve information from a database. In addition to the database fields, a set of database rows is also added to the document. When new data is added to the document, all database fields belonging to the added database table are updated. Using the office application user interface, database rows can be added in one of the following ways:

* Manually, using a data source browser and the data to fields function.
* Using the Form Letter menu item on the File menu. This menu item adds each row in the chosen data set into a newly created copy of the form letter.

To display data from a database table use the <text:database-display> element. The <text:database-select> and <text:database-next> elements can be used to determine which row within the current selection should be displayed. The current row number for a particular table can be displayed using the <text:database-row-number> element. Finally, the <text:database-name> field displays the name of the most recently used database, which is the address book file database by default.

### Database Field Data Source

A database field's source can either be the name of a database, or an IRI containing database connection resource data. If the source is a database name, then this name is used by all of the office application components to identify a database. All database fields contain a database name or connection resource, and most database fields also contain the name of a database table, which must be stored in the database. An additional attribute determines whether the database table refers to an SQL table, an OpenDocument query, or the result of a SQL command.

<define name="common-field-database-table">

<ref name="common-field-database-table-attlist"/>

<ref name="common-field-database-name"/>

</define>

#### Database Name

The text:database-name attribute specifies the source database by its name.

<define name="common-field-database-name" combine="choice">

<optional>

<attribute name="text:database-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Connection Resource

The <form:connection-resource> element specifies the source database by an [XLink]. Its xlink:href attribute either references a file containing a database, or it contains information on how to make a connection to a database, for instance a [JDBC] URL. See also section 11.1.20.

<define name="common-field-database-name" combine="choice">

<ref name="form-connection-resource"/>

</define>

#### Database Table Name

The text:table-name attribute specifies a table within the source database.

<define name="common-field-database-table-attlist" combine="interleave">

<attribute name="text:table-name">

<ref name="string"/>

</attribute>

</define>

#### Database Type

The text:table-type attribute determines whether the database table refers to an SQL table, an OpenDocument query, or the result of a SQL command.

<define name="common-field-database-table-attlist" combine="interleave">

<optional>

<attribute name="text:table-type">

<choice>

<value>table</value>

<value>query</value>

<value>command</value>

</choice>

</attribute>

</optional>

</define>

### Displaying Database Content

The <text:database-display> element displays data from a database. When a new data set is added to a document, all fields that display data from that database table update their content.

The attributes that may be associated with the <text:database-display> element are:

* text:database-name, text:table-name and text:table-type

These attributes specify the database and database table that this field uses.

* text:database-column-name

See section 6.5.2: for information about this attribute.

* style:data-style-name

If the column specifies a numeric, Boolean, date, or time value, the data is formatted according to the appropriate data style. If no data style is specified, the data style assigned to this column in is used. See section 6.7.7 for more information about using this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:database-display">

<ref name="text-database-display-attlist"/>

<text/>

</element>

</define>

<define name="text-database-display-attlist" combine="interleave">

<ref name="common-field-database-table"/>

</define>

<define name="text-database-display-attlist" combine="interleave">

<ref name="common-field-data-style-name-attlist"/>

</define>

#### Column Name

The text:column-name attribute specifies the column from which to display the data. The value of this attribute must be a column contained in the specified database.

<define name="text-database-display-attlist" combine="interleave">

<attribute name="text:column-name">

<ref name="string"/>

</attribute>

</define>

### Selecting the Next Database Row

The <text:database-next> element changes the row in the current selection which is used for display in all following <text:database-display> fields. The next row from the current selection is chosen if it satisfies a given condition. If the next row is wanted regardless of any condition, the condition may be omitted or set to true.

The attributes that may be associated with the <text:database-next> are:

* text:database-name, text:table-name and text:table-type

These attributes specify the database and the database table that this field uses.

* text:condition

See section 6.5.3: for information about this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:database-next">

<ref name="text-database-next-attlist"/>

</element>

</define>

<define name="text-database-next-attlist" combine="interleave">

<ref name="common-field-database-table"/>

</define>

#### Condition

The text:condition attribute specifies the condition expression. The expression is evaluated and if the result interpreted as a Boolean value is true, the next row is used as the new current row. Database field values can be used in the expression by enclosing in square brackets the database name, the table name, and the column name, separated by dots.

If the text:condition attribute is not present, it is assumes that the formula true, meaning that the next row is selected unconditionally.

<define name="text-database-next-attlist" combine="interleave">

<optional>

<attribute name="text:condition">

<ref name="formula"/>

</attribute>

</optional>

</define>

**Example:**

text:formula='ooo-w:[address book file.address.FIRSTNAME] == "Julie"'

This example specifies a condition that is true if the current row from an address book database table is the address for a person named Julie. If the condition shown in this example is used in a <text:database-next> element, the following happens:

* The <text:database-display> elements display the data from the first row of the current selection.
* If the FIRSTNAME column of the current row reads Julie, the current row is changed. Otherwise, nothing happens.
* If the first row is Julie, the following <text:database-display> elements display data from the second row. Otherwise, they display data from the first row.

See section 6.7.6 for more information on the formula syntax of a text:condition attribute, which is the same as that of the text:formula attribute.

### Selecting a Row Number

The <text:database-row-select> element selects a specific row from the current selection. As with the <text:database-row-next> element, a condition can be specified so that the given row is only selected if the condition is true.

The attributes that may be associated with the <text:database-row-select> are:

* text:database-name, text:table-name and text:table-type

These attributes determine the database and the database table that this field uses.

* text:condition

This attribute specifies the condition expression. See section 6.5.3 for a full explanation of how to use this attribute.

* text:row-number

See the following section 6.5.4: about this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:database-row-select">

<ref name="text-database-row-select-attlist"/>

</element>

</define>

<define name="text-database-row-select-attlist" combine="interleave">

<ref name="common-field-database-table"/>

</define>

<define name="text-database-row-select-attlist" combine="interleave">

<optional>

<attribute name="text:condition">

<ref name="formula"/>

</attribute>

</optional>

</define>

#### Selecting the Row Number

This attribute specifies the row number to select when a condition is true.

<define name="text-database-row-select-attlist" combine="interleave">

<optional>

<attribute name="text:row-number">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Displaying the Row Number

The <text:database-row-number> element displays the current row number for a given table. Note that the element displays the actual row number from the database and not the row number of the current selection that is used as an attribute value in the <text:database-row-select> element.

The attributes that may be associated with the <text:database-row-number> are:

* text:database-name, text:table-name and text:table-type

These attributes determine the database and the database table that this field uses.

* style:num-format and style:num-letter-sync

These attributes determine how the number should be formatted. See section 6.7.8 for more information on how to use these attributes.

* text:value

This attribute specifies the current row number. The number changes when new data is added to the current document.

<define name="paragraph-content" combine="choice">

<element name="text:database-row-number">

<interleave>

<ref name="common-field-database-table"/>

<ref name="common-field-num-format-attlist"/>

<optional>

<attribute name="text:value">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</interleave>

<text/>

</element>

</define>

### Display Current Database and Table

Office applications may keeps track of the last database and table that was used in the document. In other words, the table that is used by the last field that was inserted into the document. The <text:database-name> element displays the database and table name of the most recently used table.

The attributes that may be associated with the <text:database-name> element are:

* text:database-name, text:table-name and text:table-type

These attributes determine the database and the database table that this field uses.

<define name="paragraph-content" combine="choice">

<element name="text:database-name">

<ref name="common-field-database-table"/>

<text/>

</element>

</define>

## More Fields

### Page Variable Fields

Page variables allow an alternative page numbering scheme to be defined. There is only one page variable, and it is set by any set page variable field in the document. The value of the page variable is increased on each page, in the same way as regular page numbers.

#### Setting Page Variable Fields

To set a page variable field, use the <text:variable-page-set> element.

<define name="paragraph-content" combine="choice">

<element name="text:page-variable-set">

<ref name="text-set-page-variable-attlist"/>

<text/>

</element>

</define>

#### Turning Page Variables On or Off

At the beginning of a document, the page variable is inactive. The text:active attribute can be used to disable a page variable after it was used in the document.

<define name="text-set-page-variable-attlist" combine="interleave">

<optional>

<attribute name="text:active">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Page Variable Adjustment

The text:page-adjust attribute determines the page adjustment. The value of the active page variable is the current page number plus the closest page adjustment value that was previously set.

<define name="text-set-page-variable-attlist" combine="interleave">

<optional>

<attribute name="text:page-adjust">

<ref name="integer"/>

</attribute>

</optional>

</define>

#### Displaying Page Variable Fields

The <text:variable-page-get> element displays the value of the page variable. The field can be formatted in the same way as regular page number fields.

<define name="paragraph-content" combine="choice">

<element name="text:page-variable-get">

<ref name="text-get-page-variable-attlist"/>

<text/>

</element>

</define>

The attributes that may be associated with the <text:get-page-variable> element are:

* style:num-format and style:num-letter-sync

These attributes determine how the number should be formatted. See section 6.7.8 for more information on how to use these attributes.

<define name="text-get-page-variable-attlist" combine="interleave">

<ref name="common-field-num-format-attlist"/>

</define>

### Placeholders

The OpenDocument format uses placeholder fields to indicate locations in a document where the user must fill in some information. For example in a letter template, a section of the document can be reserved for the address of the recipient. A placeholder field displays text informing the user about the purpose of the placeholder and sometimes includes a description. Placeholder fields can represent different text elements, such as text or tables.

This element contains some brief text which is displayed with the placeholder.

<define name="paragraph-content" combine="choice">

<element name="text:placeholder">

<ref name="text-placeholder-attlist"/>

<text/>

</element>

</define>

The attributes that may be associated with the <text:placeholder> element are:

* Placeholder type
* Placeholder description

#### Placeholder Type

There are five different types of placeholder, representing the five possible types of content: text, tables, text boxes, images, or objects. The text:placeholder-type attribute represents the content type. This attribute is mandatory and it indicates which type of text content the placeholder represents. The value of the attribute can be text, text-box, image, table, or object.

<define name="text-placeholder-attlist" combine="interleave">

<attribute name="text:placeholder-type">

<choice>

<value>text</value>

<value>table</value>

<value>text-box</value>

<value>image</value>

<value>object</value>

</choice>

</attribute>

</define>

#### Placeholder Description

In addition to the brief text stored in the element content, may be associated a text:description attribute with the placeholder element. This attribute is optional. The purpose of the attribute is to contain a more elaborate description of the purpose of the placeholder than the description stored in the element content. See section 6.7.4 for information on using the text:description attribute.

<define name="text-placeholder-attlist" combine="interleave">

<ref name="common-field-description-attlist"/>

</define>

### Conditional Text Fields

Text fields can be used to display one text or another, depending on a condition. Conditional text fields are given a condition and two text strings. If the condition is true, one of the text strings is displayed. If the condition is false, the other text string is displayed.

<define name="paragraph-content" combine="choice">

<element name="text:conditional-text">

<ref name="text-conditional-text-attlist"/>

<text/>

</element>

</define>

The attributes that may be associated with the <text:conditional-text> element are:

* Condition
* Text to display if the condition is true
* Text to display if the condition is false
* Current condition

The text:condition attribute contains a Boolean expression. Depending on the result, the value of the text:display-if-true or text:display-if-false attribute is displayed.

<define name="text-conditional-text-attlist" combine="interleave">

<attribute name="text:condition">

<ref name="formula"/>

</attribute>

</define>

#### Text to Display if the Condition is True

The text:string-value-if-true attribute contains the text string to display if the condition is true.

<define name="text-conditional-text-attlist" combine="interleave">

<attribute name="text:string-value-if-true">

<ref name="string"/>

</attribute>

</define>

#### Text to Display if the Condition is False

The text:string-value-if-false attribute contains the text string to display if the condition is false.

<define name="text-conditional-text-attlist" combine="interleave">

<attribute name="text:string-value-if-false">

<ref name="string"/>

</attribute>

</define>

#### Current Value and Condition

The text:current-value attribute contains the evaluation result of the condition given by the expression in the text:condition attribute. Explicitly giving the result allows applications to delay evaluating the result until necessary. This attribute is valuable for the following reasons:

* If the expression is costly to evaluate, for example, the expression contains references to several databases.
* To allow transformations to correctly display the state of the document without having to parse and evaluate the condition.

<define name="text-conditional-text-attlist" combine="interleave">

<optional>

<attribute name="text:current-value">

<ref name="boolean"/>

</attribute>

</optional>

</define>

**Note**: The value of this attribute is overwritten with a new value as soon as the application evaluates the expression. This attribute has no function other than to ease transformation or initially display the document.

### Hidden Text Field

The hidden text field is closely related to the conditional text field. It displays fixed text, except when the condition is true when it does not display anything.

<define name="paragraph-content" combine="choice">

<element name="text:hidden-text">

<ref name="text-hidden-text-attlist"/>

<text/>

</element>

</define>

The attributes that may be associated with the <text:hidden-text> element are:

* Condition
* Text
* Is hidden

#### Condition

The text:condition attribute contains a Boolean expression. If the expression evaluates to true, the text is hidden.

<define name="text-hidden-text-attlist" combine="interleave">

<attribute name="text:condition">

<ref name="formula"/>

</attribute>

</define>

#### Text

The text:string-value attribute specifies the text to display if the condition is false.

<define name="text-hidden-text-attlist" combine="interleave">

<attribute name="text:string-value">

<ref name="string"/>

</attribute>

</define>

#### Is Hidden

The text:is-hidden attribute specifies whether or not the field is currently visible. The purpose of this attribute is similar to that of the text:current-value attribute in the text:condition field. Recording the result allows transformations to correctly represent the document without having to parse the condition expression or evaluate the condition when loading the document.

<define name="text-hidden-text-attlist" combine="interleave">

<optional>

<attribute name="text:is-hidden">

<ref name="boolean"/>

</attribute>

</optional>

</define>

**Note**: The value of this attribute is overwritten with a new value as soon as the application evaluates the expression. This attribute has no function other than to ease transformation or initially display the document.

### Reference Fields

The OpenDocument format uses four types of reference field and each type is represented by its own element. The reference field types are based on the type of element they refer to; notes, bookmarks, references, and sequences. Every reference contains a reference format which determines what information about the referenced target is displayed. For example, references can display:

* The page number of the referenced target
* The chapter number of the referenced target
* Wording indicating whether the referenced target is above or below the reference field

In addition, each reference field must identify its target which is usually done using a name attribute. Bookmarks and references are identified by the name of the respective bookmark or reference. Footnotes, endnotes, and sequences are are assigned names by the application used to create the OpenDocument file format automatically.

<define name="paragraph-content" combine="choice">

<element>

<choice>

<name>text:reference-ref</name>

<name>text:bookmark-ref</name>

</choice>

<interleave>

<ref name="text-common-ref-content"/>

<ref name="text-ref-content"/>

</interleave>

</element>

</define>

<define name="paragraph-content" combine="choice">

<element name="text:note-ref">

<interleave>

<ref name="text-common-ref-content"/>

<ref name="text-note-ref-content"/>

<ref name="text-ref-content"/>

</interleave>

</element>

</define>

<define name="paragraph-content" combine="choice">

<element name="text:sequence-ref">

<interleave>

<ref name="text-common-ref-content"/>

<ref name="text-sequence-ref-content"/>

</interleave>

</element>

</define>

<define name="text-common-ref-content" combine="interleave">

<text/>

</define>

The attributes that may be associated with the reference field elements are:

* Reference name
* Reference format

#### Reference Name

The text:ref-name attribute identifies the referenced element. Since bookmarks and references have a name, this name is used by the respective reference fields. Footnotes, endnotes, and sequences are are identified by a name that is usually generated automatically.

<define name="text-common-ref-content" combine="interleave">

<optional>

<attribute name="text:ref-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Note Class

For <text:note-ref> elements, the text:note-class attribute determines whether the field references a foot- or an endnote.

<define name="text-note-ref-content" combine="interleave">

<ref name="text-note-class"/>

</define>

#### Reference Format

The text:reference-format attribute determines what information about the reference is displayed. If the reference format is not specified, the page format is used as the default.

All types of reference fields support the following values for this attribute formats:

* page, which displays the number of the page on which the referenced item appears.
* chapter, which displays the number of the chapter in which the referenced item appears.
* direction, which displays whether the referenced item is above or below the reference field.
* text, which displays the text of the referenced item.

References to sequence fields support the following three additional values:

* category-and-value, which displays the name and value of the sequence.
* caption, which displays the caption in which the sequence is used.
* value, which displays the value of the sequence.

<define name="text-ref-content" combine="interleave">

<optional>

<attribute name="text:reference-format">

<choice>

<value>page</value>

<value>chapter</value>

<value>direction</value>

<value>text</value>

</choice>

</attribute>

</optional>

</define>

<define name="text-sequence-ref-content" combine="interleave">

<optional>

<attribute name="text:reference-format">

<choice>

<value>page</value>

<value>chapter</value>

<value>direction</value>

<value>text</value>

<value>category-and-value</value>

<value>caption</value>

<value>value</value>

</choice>

</attribute>

</optional>

</define>

**Example: Different reference formats and displays**

The following table shows all possible reference formats and the resulting reference display that can be used to refer to the table itself. The left column lists the value of the text:reference-format attribute and the right column

| Reference format | Reference display |
| --- | --- |
| page | 196 |
| chapter | 3.7.27 |
| text | Table 2: Examples of reference formats |
| direction | above |
| category-and-value | Table 1 |
| caption | Examples of reference formats |
| value | 1 |

### Script Fields

A script field stores scripts or sections of scripts. The field can be used to store and edit scripts that are attached to the document. The primary purpose of this field is to provide an equivalent to the <script> element in [HTML4], so that the content of a <script> element in HTML can be imported, edited, and exported using an office application software.

The source code for the script can be stored in one of the following ways:

* The <text:script> element contains the source code.
* The source code is stored in an external file. Use the xlink:href attribute to specify the location of the source file.

The element should have either a xlink:href attribute or content, but not both.

<define name="paragraph-content" combine="choice">

<element name="text:script">

<interleave>

<choice>

<group>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

</group>

<text/>

</choice>

<optional>

<attribute name="script:language">

<ref name="string"/>

</attribute>

</optional>

</interleave>

</element>

</define>

#### Script URL

The xlink:href attribute specifies the location of the file that contains the script source code. The script field should have either an URL attribute or content, but not both.

#### Script Language

The script:language attribute specifies the language in which the script source code is written, for example, JavaScript.

### Macro Fields

The macro field contains the name of a macro that is executed when the field is activated. The field also contains a description that is displayed as the field content.

The only attribute that may be associated with the <text:execute-macro> element is:

* Macro name

<define name="paragraph-content" combine="choice">

<element name="text:execute-macro">

<optional>

<attribute name="text:name">

<ref name="string"/>

</attribute>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<text/>

</element>

</define>

#### Macro Name

The text:name attribute specifies the macro to invoke when the field is activated.

### Hidden Paragraph Fields

The hidden paragraph field has a similar function to the hidden text field. However, the hidden paragraph field does not have any content. It hides the paragraph in which it is contained. This allows a paragraph of formatted text to be hidden or displayed depending on whether a condition is true or false.

Hidden paragraph fields are often used together with form letters. For example, if a condition depends on a database field, a hidden paragraph field can be used to selectively include paragraphs in the form letter depending on the database content. Multiple paragraph fields can be contained one paragraph. The paragraph is displayed if the condition associated with at least one hidden paragraph field is false. Alternatively, the conditions associated with several hidden paragraph fields can be combined into a single condition for a single field using logical operations on the conditions.

**Note**: Unlike most fields, this field does not display text, but it affects the entire paragraph in which it is contained.

The attributes that may be associated with the <text:hidden-paragraph> element are:

* Condition
* Is hidden

<define name="paragraph-content" combine="choice">

<element name="text:hidden-paragraph">

<ref name="text-hidden-paragraph-attlist"/>

<text/>

</element>

</define>

#### Condition

The text:condition attribute contains a Boolean expression. If the condition is true, the paragraph is hidden. If the condition is false, the paragraph is displayed.

<define name="text-hidden-paragraph-attlist" combine="interleave">

<attribute name="text:condition">

<ref name="formula"/>

</attribute>

</define>

#### Is Hidden

The text:is-hidden attribute records whether the paragraph is currently visible or not. It has the same purpose as the corresponding attribute of the hidden text field, namely to allow correct display of the paragraph without having to evaluate the condition first. The value of this attribute is overwritten with a new value as soon as the application evaluates the expression.

**Note**: This attribute has no function other than to ease transformation or initially display the document.

<define name="text-hidden-paragraph-attlist" combine="interleave">

<optional>

<attribute name="text:is-hidden">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### DDE Connection Fields

A DDE field allows information from a DDE connection to be displayed. The only parameter required for the DDE field is the name of the DDE connection that supplies the data to this field. This DDE connection element specifies the actual DDE field that appears in the text body.

The field element contains the content of the most recent data that was received from the DDE connection. This may be used to render the document if the DDE connection cannot be accessed.

See section 12.6 for the use of DDE connections.

<define name="paragraph-content" combine="choice">

<element name="text:dde-connection">

<attribute name="text:connection-name">

<ref name="string"/>

</attribute>

<text/>

</element>

</define>

The only attribute that may be associated with the <text:dde-connection> element is:

* DDE connection name

#### DDE Connection Name

The text:name attribute specifies the name of the DDE connection to which the field refers.

### Measure Fields

Within the text contained in measure drawing objects (see section 9.2.11), a <text:measure> field displays the current measure. The draw:kind attribute specifies which part of the measure is displayed. It my have one of the following values:

* value: The measure's value is displayed, for instance “12”
* unit: The measure's unit is displayed, for instance “inch”
* gap: A gap or blank is displayed if and only if the measure text's writing direction is perpendicular to the measure line. The purpose of this value is add some space between the measure line and the text if the text is displayed perpendicular to the measure line.

<define name="paragraph-content" combine="choice">

<element name="text:measure">

<attribute name="text:kind">

<choice>

<value>value</value>

<value>unit</value>

<value>gap</value>

</choice>

</attribute>

<text/>

</element>

</define>

### Table Formula Field

The table formula field is a legacy from previous versions of current office applications. It should not be used in new documents. It stores a formula to be used in tables, a function that is better performed by the table:formula attribute of the table cell.

**Note**: This element should not be used in new documents.

The table formula field can take the following attributes:

* text:formula

This attribute contains the actual expression used to compute the value of the table formula field. See section 6.7.6 for information on using this attribute.

* text:display

Use this attribute to specify one of the following:

* + To display the value of the field.
  + To display the formula used to compute the value.

See section 6.7.5 for information on using this attribute.

* style:data-style-name

This attribute specifies the data style to use to format a numeric, Boolean, or date/time variable. If a data style is not specified, a standard data style is used. See section 6.7.7 for information on using this attribute.

<define name="paragraph-content" combine="choice">

<element name="text:table-formula">

<interleave>

<ref name="common-field-formula-attlist"/>

<ref name="common-field-display-value-formula-attlist"/>

<ref name="common-field-data-style-name-attlist"/>

</interleave>

<text/>

</element>

</define>

## Common Field Attributes

The attributes described in this section can be used with several field elements.

### Variable Value Types and Values

Variables and most variable fields have a current value. Every variable has a value type that must be specified when the field supports multiple value types. The value type is specified using the office:value-type attribute.

<define name="common-value-type-attlist">

<attribute name="office:value-type">

<ref name="valueType"/>

</attribute>

</define>

Depending on the value type, the value itself is written to different value attributes. The supported value types, their respective value attributes, and how the values are encoded are described in the following table:

| Value Type | Value Attribute(s) | Encoded as... | Example |
| --- | --- | --- | --- |
| float | office:value | Numeric value | "12.345" |
| percentage | office:value | Numeric value | "0.50" |
| currency | office:value and  office:currency | Numeric value and  currency symbol | "100" "USD" |
| date | office:date-value | Date value as specified in §3.2.9 of [xmlschema-2], or date and time value as specified in §3.2.7 of [xmlschema-2] | "2003-04-17" |
| time | office:time-value | Duration, as specified in §3.2.6 of [xmlschema-2] | "PT03H30M00S" |
| boolean | office:boolean-value | true or false | "true" |
| string | office:string-value | Strings | "abc def" |

The OpenDocument concept of field values and value types and their encoding in XML is modeled on the corresponding XML for table cell attributes. See section 8.1.3 for information on table cells and their attributes.

The definition of the entity %value-attlist; is as follows:

<define name="common-value-and-type-attlist">

<choice>

<group>

<attribute name="office:value-type">

<value>float</value>

</attribute>

<attribute name="office:value">

<ref name="double"/>

</attribute>

</group>

<group>

<attribute name="office:value-type">

<value>percentage</value>

</attribute>

<attribute name="office:value">

<ref name="double"/>

</attribute>

</group>

<group>

<attribute name="office:value-type">

<value>currency</value>

</attribute>

<attribute name="office:value">

<ref name="double"/>

</attribute>

<optional>

<attribute name="office:currency">

<ref name="string"/>

</attribute>

</optional>

</group>

<group>

<attribute name="office:value-type">

<value>date</value>

</attribute>

<attribute name="office:date-value">

<ref name="dateOrDateTime"/>

</attribute>

</group>

<group>

<attribute name="office:value-type">

<value>time</value>

</attribute>

<attribute name="office:time-value">

<ref name="duration"/>

</attribute>

</group>

<group>

<attribute name="office:value-type">

<value>boolean</value>

</attribute>

<attribute name="office:boolean-value">

<ref name="boolean"/>

</attribute>

</group>

<group>

<attribute name="office:value-type">

<value>string</value>

</attribute>

<optional>

<attribute name="office:string-value">

<ref name="string"/>

</attribute>

</optional>

</group>

</choice>

</define>

### Fixed

The text:fixed attribute specifies whether or not the value of a field element is fixed. If the value of a field is fixed, the value of the field element to which this attribute is attached is preserved in all future edits of the document. If the value of the field is not fixed, the value of the field may be replaced by a new value when the document is edited.

This attribute can be used with:

* Date fields
* Time fields
* Page number fields
* All sender fields
* All author fields

<define name="common-field-fixed-attlist">

<optional>

<attribute name="text:fixed">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Variable Name

Use the text:name attribute to specify the name of a variable when it is being declared, set, or displayed a variable. This attribute can be used with any of the following elements:

* <text:variable-del>
* <text:variable-set>
* <text:variable-get>
* <text:variable-input>
* <text:user-field-del>
* <text:user-field-get>
* <text:user-field-input>
* <text:sequence-del>
* <text:sequence>

When this attribute is being used to specify the name of a variable to display, a variable of the appropriate type with the same name must already have been declared.

<define name="common-field-name-attlist">

<attribute name="text:name">

<ref name="variableName"/>

</attribute>

</define>

### Description

The text:description attribute contains a brief message that is displayed when users are prompted for input. This attribute can be used with any of the following elements:

* <text:placeholder>
* <text:variable-input>
* <text:user-field-input>
* <text:text-input>

<define name="common-field-description-attlist">

<optional>

<attribute name="text:description">

<text/>

</attribute>

</optional>

</define>

### Display

The text:display attribute supports up to three values as follows:

* value  
  This value displays the value of the field. Some fields do not support this value. In these cases, the text:display attribute only takes the values value or none, and value or formula, respectively.
* formula  
  This value allows the display of the formula rather than the value of the field. Some fields do not support this value. In these cases, the text:display attribute only takes the values value or none, and value or formula, respectively.
* none  
  Several variable fields support this value, which hides the field content. This allows variables to be set in one part of the document and displayed in another part of the document.

This attribute can be used with any of the following elements:

* <text:variable-set>
* <text:variable-get>
* <text:variable-input>
* <text:user-field-get>
* <text:expression>

<define name="common-field-display-value-none-attlist">

<optional>

<attribute name="text:display">

<choice>

<value>value</value>

<value>none</value>

</choice>

</attribute>

</optional>

</define>

<define name="common-field-display-value-formula-none-attlist">

<optional>

<attribute name="text:display">

<choice>

<value>value</value>

<value>formula</value>

<value>none</value>

</choice>

</attribute>

</optional>

</define>

<define name="common-field-display-value-formula-attlist">

<optional>

<attribute name="text:display">

<choice>

<value>value</value>

<value>formula</value>

</choice>

</attribute>

</optional>

</define>

### Formula

The text:formula attribute contains the formula or expression used to compute the value of the field. This attribute can be used with any of the following elements:

* <text:variable-set>
* <text:user-field-del>
* <text:sequence>
* <text:expression>

The formula should start with a namespace prefix that indicates the syntax and semantic used within the formula.

<define name="common-field-formula-attlist">

<optional>

<attribute name="text:formula">

<ref name="formula"/>

</attribute>

</optional>

</define>

### Formatting Style

The style:data-style-name attribute refers to the data style used to format the numeric value. For general information about styles, see Chapter 14. For more information about data styles, see section 14.7.

For string variables this attribute must be omitted. Otherwise, this attribute is required.

The name must match the name of a data style.

This attribute can be used with any of the following elements:

* <text:date>
* <text:time>
* <text:page-number>
* <text:variable-set>
* <text:variable-get>
* <text:variable-input>
* <text:user-field-get>
* <text:user-field-input>
* <text:expression>

<define name="common-field-data-style-name-attlist">

<optional>

<attribute name="style:data-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

### Number Formatting Style

Numbers that are used for number sequences such as page numbers or sequence fields can be formatted according to the number styles described in section 12.2. The number styles supported are as follows:

* Numeric: 1, 2, 3, ...
* Alphabetic: a, b, c, ... or A, B, C, ...
* Roman: i, ii, iii, iv, ... or I, II, III, IV,...

**Note**: The value of this attribute can be any of the [XSLT] number format keys 1, i, I, a, or A.

Alphabetic number styles need an additional attribute to determine how to display numbers that cannot be represented by a single letter. The OpenDocument format supports:

* Synchronized letter numbering, where letters are used multiple times, for example aa, bb, cc, and so on.
* Non-synchronized letter numbering, for example aa, ab, ac, and so on.

See section 12.2 for more information.

<define name="common-field-num-format-attlist">

<optional>

<ref name="common-num-format-attlist"/>

</optional>

</define>

1. Text Indices

OpenDocument text documents may contain automatically generated indices. An index generally contains a sorted list of all items of a certain types, where the sorting (document position, alphabetical, etc.) and the type of items (chapter headings, tables, etc.) are determined by the specific type of index.

## Index Marks

There are three types of index marks that correspond to the three types of index that make use of index marks. The three types of index marks are:

* Table of content index marks
* User-defined index marks
* Alphabetical index marks

The XML code for index marks is similar to the code for Bookmarks and References. The following are some basic rules about index marks:

* Each index mark is represented by a start and an end element.
* Both elements use an ID attribute to match the appropriate start and end elements.
* The start and end elements for an index mark must be contained in the same paragraph, with the start element occurring first.
* The attributes associated with the index mark are attached to the start element.
* The text between the start and end elements is the text the index entry.
* The formatting attributes for index marks can overlap.

### Table of Content Index Marks

The <text:toc-mark-start> element marks the start of a table of content index entry. The ID specified by the text:id attribute must be unique except for the matching index mark end element. There must be an end element to match the start element located in the same paragraph, with the start element appearing first.

<define name="paragraph-content" combine="choice">

<element name="text:toc-mark-start">

<ref name="text-toc-mark-start-attrs"/>

</element>

</define>

The attributes associated with the <text:toc-mark-start> element are:

* A text:id attribute to allow the start and end elements to be matched.
* A text:outline-level attribute to specify the outline level of the resulting table of content index entry.

<define name="text-toc-mark-start-attrs">

<ref name="text-id"/>

<ref name="text-outline-level"/>

</define>

<define name="text-outline-level">

<optional>

<attribute name="text:outline-level">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

<define name="text-id">

<attribute name="text:id">

<ref name="string"/>

</attribute>

</define>

The <text:toc-mark-end> element marks the end of a table of contents index entry. There must be a start element with the same text:id value to match the end element located in the same paragraph, with the start element appearing first.

<define name="paragraph-content" combine="choice">

<element name="text:toc-mark-end">

<ref name="text-id"/>

</element>

</define>

Table of content index marks also have a variant that does not enclose the text to be indexed. This is represented using the <text:toc-mark> element which contains a text:string-value attribute for the text of the index entry. In this situation, a text:id attribute is not necessary because there are no start and end elements to match.

<define name="paragraph-content" combine="choice">

<element name="text:toc-mark">

<attribute name="text:string-value">

<ref name="string"/>

</attribute>

<ref name="text-outline-level"/>

</element>

</define>

### User-Defined Index Marks

The <text:user-index-mark-start> element marks the start of a user-defined index entry. The ID specified by the text:id attribute must be unique except for the matching index mark end element. There must be an end element to match the start element located in the same paragraph, with the start element appearing first.

<define name="paragraph-content" combine="choice">

<element name="text:user-index-mark-start">

<ref name="text-id"/>

<ref name="text-outline-level"/>

<ref name="text-index-name"/>

</element>

</define>

The <text:user-index-mark-end> element marks the end of the user-defined index entry. There must be a start element with the same text:id value to match the end element located in the same paragraph, with the start element appearing first.

<define name="paragraph-content" combine="choice">

<element name="text:user-index-mark-end">

<ref name="text-id"/>

<ref name="text-outline-level"/>

</element>

</define>

User index marks also have a variant that does not enclose the text to be indexed. This is represented by the <text:user-index-mark> element which contains a text:string-value attribute for the text of the index entry. In this situation, the text:id attribute is not necessary because there are no start and end elements to match.

<define name="paragraph-content" combine="choice">

<element name="text:user-index-mark">

<attribute name="text:string-value">

<ref name="string"/>

</attribute>

<ref name="text-outline-level"/>

<ref name="text-index-name"/>

</element>

</define>

#### Name of User Index

There can be more than one user-defined index. In this case, the user index must be named using the text:index-name attribute. This attribute determines to which user-defined index an index mark belongs. If no name is given, the default user-defined index is used.

<define name="text-index-name">

<attribute name="text:index-name">

<ref name="string"/>

</attribute>

</define>

### Alphabetical Index Mark

The <text:alpha-index-mark-start> element marks the start of an alphabetical index entry. There are two optional attributes that may contain keys for alphabetical entries, which allows structuring of entries. There is also a Boolean attribute that determines if this entry is intended to be the main entry, if there are several equal entries.

<define name="paragraph-content" combine="choice">

<element name="text:alphabetical-index-mark-start">

<ref name="text-id"/>

<ref name="text-alphabetical-index-mark-attrs"/>

</element>

</define>

The attributes associated with the <text:toc-mark-start> element are:

* A text:id attribute to allow the start and end elements to be matched.
* Additional keys
* Main entry

The <text:alpha-index-mark-end> element marks the end of an alphabetical index entry.

<define name="paragraph-content" combine="choice">

<element name="text:alphabetical-index-mark-end">

<ref name="text-id"/>

</element>

</define>

Alphabetical index marks also have a variant that does not enclose the text to be indexed. This is represented using the <text:alpha-index-mark> element which contains a text:string-value attribute for the text of the index entry. In this situation, a text:id attribute is not necessary because there are no start and end elements to match.

<define name="paragraph-content" combine="choice">

<element name="text:alphabetical-index-mark">

<attribute name="text:string-value">

<ref name="string"/>

</attribute>

<ref name="text-alphabetical-index-mark-attrs"/>

</element>

</define>

#### Additional Keys

The text:key1 and text:key2 attributes specify additional keys for the alphabetical index mark. If only one key is used, it must be contained in the text:key1 attribute.

<define name="text-alphabetical-index-mark-attrs" combine="interleave">

<optional>

<attribute name="text:key1">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="text:key2">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Phonetic Keys

For ideographic languages, there sometimes is no obvious or common sorting of the language's characters. One common scheme to facilitate an alphabetical index in such languages is to sort according to a phonetic description of the search time. To achieve this in the OpenDocument file format, there are additional attributes for the string value and the two keys for phonetic descriptions. The original value and key attributes are for display, but if phonetic variants are present, they should be used for sorting the index.

<define name="text-alphabetical-index-mark-attrs" combine="interleave">

<optional>

<attribute name="text:string-value-phonetic">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="text:key1-phonetic">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="text:key2-phonetic">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Main Entry

If there are several index marks for the same entry, one of these entries may be declared as the main entry using the text:main-entry attribute.

<define name="text-alphabetical-index-mark-attrs" combine="interleave">

<optional>

<attribute name="text:main-entry" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Bibliography Index Mark

The <text:bibliography-mark> element contains the text and information for a bibliography index entry. It supports attributes for each type of bibliographical data that a bibliography index may contain.

<define name="paragraph-content" combine="choice">

<element name="text:bibliography-mark">

<attribute name="text:bibliography-type">

<ref name="text-bibliography-types"/>

</attribute>

<zeroOrMore>

<attribute>

<choice>

<name>text:identifier</name>

<name>text:address</name>

<name>text:annote</name>

<name>text:author</name>

<name>text:booktitle</name>

<name>text:chapter</name>

<name>text:edition</name>

<name>text:editor</name>

<name>text:howpublished</name>

<name>text:institution</name>

<name>text:journal</name>

<name>text:month</name>

<name>text:note</name>

<name>text:number</name>

<name>text:organizations</name>

<name>text:pages</name>

<name>text:publisher</name>

<name>text:school</name>

<name>text:series</name>

<name>text:title</name>

<name>text:report-type</name>

<name>text:volume</name>

<name>text:year</name>

<name>text:url</name>

<name>text:custom1</name>

<name>text:custom2</name>

<name>text:custom3</name>

<name>text:custom4</name>

<name>text:custom5</name>

<name>text:isbn</name>

<name>text:issn</name>

</choice>

<ref name="string"/>

</attribute>

</zeroOrMore>

<text/>

</element>

</define>

<define name="text-bibliography-types">

<choice>

<value>article</value>

<value>book</value>

<value>booklet</value>

<value>conference</value>

<value>custom1</value>

<value>custom2</value>

<value>custom3</value>

<value>custom4</value>

<value>custom5</value>

<value>email</value>

<value>inbook</value>

<value>incollection</value>

<value>inproceedings</value>

<value>journal</value>

<value>manual</value>

<value>mastersthesis</value>

<value>misc</value>

<value>phdthesis</value>

<value>proceedings</value>

<value>techreport</value>

<value>unpublished</value>

<value>www</value>

</choice>

</define>

## Index Structure

An index consists of two parts: The index source, and the index body. Both of these are contained in an element of their own, which in turn form the two child elements for the index element itself.

The index source is specific to the type of index it is being used for. It contains the information necessary to generate the index content. An index source has no graphical rendition.

The index body is the same for all types of indices. It contains the text generated from the information in the index source. The text contained in an index body is in no way special or different from text used elsewhere in this specification.

The content of the index body can be regenerated at any time from the information contained in the index source and the remainder of the document. One could say that the index source contains all the logical information about an index, while the index body contains the rendition of the index. A tool extracting structure information about a document might look only at the index source, while a rendering program might look only at an index body.

### Index Source

An index source element contains the information necessary to generate the index body. In addition to a set of flags that determine which information to include in an index, the index source contains a set of index templates. Such a template determines how an item to be contained in the index is to be rendered.

For example, a table of content might look as follows:

1 Introduction 7

1.1 Namespaces 7

1.2 Relax-NG Schema Prefix 8

An index source for this index would contain flags indicating that chapter headers at least up to level 2 are to be included. The contained index templates would define that an entry consists of the chapter number, a space, the chapter name, a tab (with a '.' leader) and the page number.

The various index templates are described together with their index elements. The index templates elements in use are described in section 7.12.

The different index source elements are described together with their corresponding index elements.

### Index Body Section

The index body contains the current textual rendition of the index. The format is the same as for regular text within this specification, e.g., text sections, except that it also allows index title sections.

<define name="text-index-body">

<element name="text:index-body">

<zeroOrMore>

<ref name="index-content-main"/>

</zeroOrMore>

</element>

</define>

<define name="index-content-main">

<choice>

<ref name="text-content"/>

<ref name="text-index-title"/>

</choice>

</define>

### Index Title Section

The index title is usually contained in a section of its own. The reason for this enclosure is to enable the popular layout of having an index title across the entire page, but having the index itself in a two column layout.

<define name="text-index-title">

<element name="text:index-title">

<ref name="sectionAttr"/>

<zeroOrMore>

<ref name="index-content-main"/>

</zeroOrMore>

</element>

</define>

## Table Of Content

A table of contents provides the user with a guide through the content of the document. It is typically found at the beginning of a document, contains the chapter headings with their respective page numbers. An example for a table of content may be found at the beginning of this document.

The items that can be listed in a table of content are:

* Headers (as defined by the outline structure of the document), up to a selectable level
* Table of content index marks
* Paragraphs formatted with a set of selectable paragraph styles

The table of contents is represented by the <text:table-of-content> element. The <text:table-of-content> element supports the same style (and class) attributes as a text section (see section 4.4).

<define name="text-table-of-content">

<element name="text:table-of-content">

<ref name="sectionAttr"/>

<ref name="text-table-of-content-source"/>

<ref name="text-index-body"/>

</element>

</define>

### Table of Content Source

The <text:table-of-content-source> element specifies how the table of contents is generated. It specifies how the entries are gathered.

The <text:table-of-content-source> element contains

* an optional template for the index title
* optional templates for index entries, one per level
* optionally a list of styles to be used for gathering index entries

<define name="text-table-of-content-source">

<element name="text:table-of-content-source">

<ref name="text-table-of-content-source-attlist"/>

<optional>

<ref name="text-index-title-template"/>

</optional>

<zeroOrMore>

<ref name="text-table-of-content-entry-template"/>

</zeroOrMore>

<zeroOrMore>

<ref name="text-index-source-styles"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <text:table-of-content-source> element are:

* Outline level
* Use outline
* Use index marks
* Use index source styles
* Index source
* Relative tab stop position

#### Outline Level

The text:outline-level attribute specifies which outline levels are used when generating the table of contents.

The value of this attribute must be an integer greater than zero. If this attribute is omitted, all outline levels are used by default.

<define name="text-table-of-content-source-attlist" combine="interleave">

<optional>

<attribute name="text:outline-level">

<choice>

<ref name="positiveInteger"/>

</choice>

</attribute>

</optional>

</define>

#### Use Outline

The text:use-outline-level attribute determines whether headings are used to generate index entries. If the value is true, the table of contents includes entries generated from headings. The text:outline-level attribute specifies up to which level headings are being included. See section 7.1 for more information on index marks.

<define name="text-table-of-content-source-attlist" combine="interleave">

<optional>

<attribute name="text:use-outline-level" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Use Index Marks

The text:use-index-marks attribute determines whether or not index marks are used to generate index entries. If the value is true, the table of contents includes entries generated from table of content index marks. The text:outline-level attribute specifies up to which level index marks are being included. See section 7.1 for more information on index marks.

<define name="text-table-of-content-source-attlist" combine="interleave">

<optional>

<attribute name="text:use-index-marks">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Use Index Source Styles

The text:use-index-source-styles attribute determines whether or not index entries are generated for paragraph formatted using certain paragraph styles. If the value is true, the table of contents includes an entry for every paragraph formatted with one of the styles specified in a <text:index-source-style> element. The text:outline-level attribute specifies up to which level index source styles are being included.

<define name="text-table-of-content-source-attlist" combine="interleave">

<optional>

<attribute name="text:use-index-source-styles">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Index Scope

The text:index-scope attribute determines whether the table-of-content is generated for the whole document, or only for the current chapter.

<define name="text-table-of-content-source-attlist" combine="interleave">

<optional>

<attribute name="text:index-scope">

<choice>

<value>document</value>

<value>chapter</value>

</choice>

</attribute>

</optional>

</define>

#### Relative Tab-Stop Position

The text:relative-tab-stop-position attribute determines whether the position of tab stops is relative to the left margin or to the left indent as determined by the paragraph style. This is useful for copying the same entry configuration for all outline levels because with relative tab stop positions the tabs do not need to be adjusted to the respective paragraph format.

<define name="text-table-of-content-source-attlist" combine="interleave">

<optional>

<attribute name="text:relative-tab-stop-position">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Table of Content Entry Template

The <text:table-of-content-entry-template> element determines the format of an index entry for a particular outline level. For each table of content, there must not be more than one element for any outline level. (See .)

<define name="text-table-of-content-entry-template">

<element name="text:table-of-content-entry-template">

<ref name="text-table-of-content-entry-template-attlist"/>

<zeroOrMore>

<ref name="text-table-of-content-children"/>

</zeroOrMore>

</element>

</define>

A table of content entry template supports the following kinds of text elements:

* Chapter and Page Number
* Reference Text
* Text Span
* Tab
* Hyperlink start and end

<define name="text-table-of-content-children">

<choice>

<ref name="text-index-entry-chapter"/>

<ref name="text-index-entry-page-number"/>

<ref name="text-index-entry-text"/>

<ref name="text-index-entry-span"/>

<ref name="text-index-entry-tab-stop"/>

<ref name="text-index-entry-link-start"/>

<ref name="text-index-entry-link-end"/>

</choice>

</define>

The attributes that may be associated associate with the <text:table-of-content-entry-template> element are:

* Template outline level
* Paragraph style

#### Template Outline Level

This attribute specifies to which outline level the entry configuration applies. Outline levels must be unique for the template elements in one index source.

<define name="text-table-of-content-entry-template-attlist"

combine="interleave">

<attribute name="text:outline-level">

<ref name="positiveInteger"/>

</attribute>

</define>

#### Paragraph Style

The text:style-name attribute specifies the paragraph style to use for this template.

<define name="text-table-of-content-entry-template-attlist"

combine="interleave">

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</define>

## Index of Illustrations

The index of illustrations lists all images and graphics in the current document or chapter. The index entries can be derived from the caption of the illustration or the name of the illustration.

The attribute that may be attached to the <text:illustration-index> element is:

* text:style-name

This attribute specifies the section style to use for the index of illustrations.

<define name="text-illustration-index">

<element name="text:illustration-index">

<ref name="sectionAttr"/>

<ref name="text-illustration-index-source"/>

<ref name="text-index-body"/>

</element>

</define>

### Index of Illustration Source

The <text:illustration-index-source> element specifies how the index of illustrations is generated.

<define name="text-illustration-index-source">

<element name="text:illustration-index-source">

<ref name="text-illustration-index-source-attrs"/>

<optional>

<ref name="text-index-title-template"/>

</optional>

<optional>

<ref name="text-illustration-index-entry-template"/>

</optional>

</element>

</define>

The attributes that may be associated with a <text:illustration-index-source> element are:

* Use caption
* Caption sequence name
* Caption sequence format
* Index scope

This attribute specifies whether the index applies to the entire document or only the the current chapter.

* text:relative-tab-stop-position

This attribute specifies whether the position of tab stops are interpreted relative to the left margin or the left indent.

<define name="text-illustration-index-source-attrs" combine="interleave">

<ref name="text-index-scope-attr"/>

</define>

<define name="text-index-scope-attr">

<optional>

<attribute name="text:index-scope" a:defaultValue="document">

<choice>

<value>document</value>

<value>chapter</value>

</choice>

</attribute>

</optional>

</define>

<define name="text-illustration-index-source-attrs" combine="interleave">

<ref name="text-relative-tab-stop-position-attr"/>

</define>

<define name="text-relative-tab-stop-position-attr">

<optional>

<attribute name="text:relative-tab-stop-position"

a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Use Caption

Each object contained in a text document has a name. In addition, images also have a caption. The image caption or the image name can be gathered for the index of illustrations.

<define name="text-illustration-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:use-caption" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Caption Sequence Name

Captions are associated with a sequence name. If the text:use-caption attribute is set to true, this attribute must be used to specify the sequence with which the captions are associated.

If this attribute is omitted, the default sequence for the object type is used, for example the sequence “Illustration” is used for illustrations.

<define name="text-illustration-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:caption-sequence-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Caption Sequence Format

If the entries for the index of illustrations are obtained from the image captions, this attribute must be used to specify the format for the entries.

<define name="text-illustration-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:caption-sequence-format">

<choice>

<value>text</value>

<value>category-and-value</value>

<value>caption</value>

</choice>

</attribute>

</optional>

</define>

### Illustration Index Entry Template

The illustration index entry template element determines the format of an index entry for a particular outline level.

<define name="text-illustration-index-entry-template">

<element name="text:illustration-index-entry-template">

<ref name="text-illustration-index-entry-content"/>

</element>

</define>

<define name="text-illustration-index-entry-content">

<ref name="text-illustration-index-entry-template-attrs"/>

<zeroOrMore>

<choice>

<ref name="text-index-entry-page-number"/>

<ref name="text-index-entry-text"/>

<ref name="text-index-entry-span"/>

<ref name="text-index-entry-tab-stop"/>

</choice>

</zeroOrMore>

</define>

The attribute that may be associated with the <text:illustration-index-entry-template> element is:

* Paragraph style

#### Paragraph Style

This attribute identifies the paragraph style to use for this template.

<define name="text-illustration-index-entry-template-attrs">

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</define>

## Index of Tables

The index of tables lists all of the tables in the current document or chapter. It works in exactly the same way as the index of illustrations.

<define name="text-table-index">

<element name="text:table-index">

<ref name="sectionAttr"/>

<ref name="text-table-index-source"/>

<ref name="text-index-body"/>

</element>

</define>

### Table Index Source

The <text:table-index-source> element specifies how the index of tables is generated.

The attributes that may be associated with this element are the same as those that can be associated with the <text:illustration-index-source> element. See section 7.4.1 for detailed information about these attributes.

<define name="text-table-index-source">

<element name="text:table-index-source">

<ref name="text-illustration-index-source-attrs"/>

<optional>

<ref name="text-index-title-template"/>

</optional>

<optional>

<ref name="text-table-index-entry-template"/>

</optional>

</element>

</define>

### Table Index Entry Template

The table index entry template element determines the format of an index entry for a particular outline level.

The attributes that may be associated with this element are the same as those that can be associated with the <text:illustration-index-entry-template> element. See section 7.4.2 for detailed information about these attributes.

<define name="text-table-index-entry-template">

<element name="text:table-index-entry-template">

<ref name="text-illustration-index-entry-content"/>

</element>

</define>

## Index of Objects

The index of objects lists all of the objects in the current document or chapter. It gathers its entries from the known object types.

<define name="text-object-index">

<element name="text:object-index">

<ref name="sectionAttr"/>

<ref name="text-object-index-source"/>

<ref name="text-index-body"/>

</element>

</define>

### Object Index Source

The <text:object-index-source> element determines which object types to include in the index of objects. It also supports the standard index source attributes.

<define name="text-object-index-source">

<element name="text:object-index-source">

<ref name="text-object-index-source-attrs"/>

<optional>

<ref name="text-index-title-template"/>

</optional>

<optional>

<ref name="text-object-index-entry-template"/>

</optional>

</element>

</define>

The attributes that may be associated with the <text:object-index-source> element are:

* Use attributes, text:use-\*-objects
* Index scope (see section 7.4.1)

This attribute specifies whether the index applies to the entire document or only the the current chapter.

* Relative tab stop position (see section 7.4.1)

This attribute specifies whether the position of tab stops are interpreted relative to the left margin or the left indent.

<define name="text-object-index-source-attrs" combine="interleave">

<ref name="text-index-scope-attr"/>

</define>

<define name="text-object-index-source-attrs" combine="interleave">

<ref name="text-relative-tab-stop-position-attr"/>

</define>

#### Use Attributes

The text:use-\*-objects attributes specify which types of objects to include in the index of objects. There is an attribute for each type of object as follows:

* text:use-spreadsheet-objects
* text:use-draw-objects
* text:use-chart-objects
* text:use-math-objects

Other objects are included or omitted using the following attribute:

* text:use-other-objects

<define name="text-object-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:use-spreadsheet-objects" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

<define name="text-object-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:use-math-objects" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

<define name="text-object-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:use-draw-objects" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

<define name="text-object-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:use-chart-objects" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

<define name="text-object-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:use-other-objects" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Object Index Entry Template

The object index entry template element determines the format of an index entry for a particular outline level.

<define name="text-object-index-entry-template">

<element name="text:object-index-entry-template">

<ref name="text-illustration-index-entry-content"/>

</element>

</define>

The attributes that may be associated with this element are the same as those that can be associated with the <text:illustration-index-entry-template> element. See section 7.4.2 for detailed information about these attributes.

## User-Defined Index

A user-defined index combines the capabilities of the indexes discussed earlier in this chapter. A user-defined index can gather entries from the following sources:

* Index marks
* Paragraphs formatted using particular paragraph styles
* Tables, images, or objects
* Text frames

The <text:user-index> element represents a user-defined index.

<define name="text-user-index">

<element name="text:user-index">

<ref name="sectionAttr"/>

<ref name="text-user-index-source"/>

<ref name="text-index-body"/>

</element>

</define>

### User-Defined Index Source

The <text:user-index-source> element can contain several attributes that determine how the index entries are gathered. It also supports an attribute that determines how the outline levels of the index entries are gathered.

The paragraph formats that are used as index marks are encoded in <text:index-source-styles> elements, just like in <text:table-of-content-source> elements.

<define name="text-user-index-source">

<element name="text:user-index-source">

<ref name="text-user-index-source-attr"/>

<optional>

<ref name="text-index-title-template"/>

</optional>

<zeroOrMore>

<ref name="text-user-index-entry-template"/>

</zeroOrMore>

<zeroOrMore>

<ref name="text-index-source-styles"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with <text:user-index-source> elements are:

* Use attributes, text:use-\*
* Copy outline level
* Index scope (see section 7.4.1)

This attribute specifies whether the index applies to the entire document or only to the current chapter.

* Index name

In order to support several user-defined indexes with different contents, user index marks have a text:index-name attribute. The same attribute can be used with a <text:user-index-source> element to specify which index marks apply to the current index.

* Relative tab stop position (see section 7.4.1)

This attribute specifies whether the position of tab stops are interpreted relative to the left margin or the left indent.

<define name="text-user-index-source-attr" combine="interleave">

<ref name="text-index-scope-attr"/>

<ref name="text-relative-tab-stop-position-attr"/>

<attribute name="text:index-name">

<ref name="string"/>

</attribute>

</define>

#### Use Attributes

The text:use-\* attributes specify which entries to include in the user-defined index. The following attributes exist:

* text:use-index-marks
* text:use-graphics
* text:use-tables
* text:use-floating-frames
* text:use-objects

<define name="text-user-index-source-attr" combine="interleave">

<optional>

<attribute name="text:use-index-marks" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="text:use-graphics" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="text:use-tables" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="text:use-floating-frames"

a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="text:use-objects" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Copy Outline Levels

This attribute can have a value of true or false.

If the value is true, the entries are gathered at the outline level of the source element to which they refer.

If the value is false, all index entries gathered are at the top outline level. For example, if an image appears in section 1.2.3, the entry for the image is located at outline level 3.

<define name="text-user-index-source-attr" combine="interleave">

<optional>

<attribute name="text:copy-outline-levels"

a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### User-Defined Index Entry Template

User index entry templates support entry elements for chapter number, page number, entry text, text spans, and tab stops.

<define name="text-user-index-entry-template">

<element name="text:user-index-entry-template">

<ref name="text-user-index-entry-template-attrs"/>

<zeroOrMore>

<choice>

<ref name="text-index-entry-chapter"/>

<ref name="text-index-entry-page-number"/>

<ref name="text-index-entry-text"/>

<ref name="text-index-entry-span"/>

<ref name="text-index-entry-tab-stop"/>

</choice>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <text:user-index-entry-template> elements are:

* Template outline level
* Paragraph style

#### Template Outline Level

The text:outline-level attribute specifies to which outline level this entry configuration applies.

All <text:outline-level> elements that are contained in the same parent element must specify different outline levels.

<define name="text-user-index-entry-template-attrs" combine="interleave">

<attribute name="text:outline-level">

<ref name="positiveInteger"/>

</attribute>

</define>

#### Paragraph Style

The text:style-name attribute specifies the paragraph style to use for the template.

<define name="text-user-index-entry-template-attrs" combine="interleave">

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</define>

## Alphabetical Index

An alphabetical index gathers its entries solely from index marks.

<define name="text-alphabetical-index">

<element name="text:alphabetical-index">

<ref name="sectionAttr"/>

<ref name="text-alphabetical-index-source"/>

<ref name="text-index-body"/>

</element>

</define>

### Alphabetical Index Source

The <text:alphabetical-index-source> element specifies how the alphabetical index is generated.

<define name="text-alphabetical-index-source">

<element name="text:alphabetical-index-source">

<ref name="text-alphabetical-index-source-attrs"/>

<optional>

<ref name="text-index-title-template"/>

</optional>

<zeroOrMore>

<ref name="text-alphabetical-index-entry-template"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with <text:alphabetical-index-source> elements are:

* Ignore case
* Main entry style name
* Alphabetical separators
* Combine entries attributes
* Use keys as entries
* Capitalize entries
* Comma separated entries
* Sort language, country and algorithm
* Index scope (see section 7.4.1)

This attribute specifies whether the index applies to the entire document or only to the current chapter.

* Relative tab stop position (see section 7.4.1)

This attribute specifies whether the position of tab stops are interpreted relative to the left margin or the left indent.

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<ref name="text-index-scope-attr"/>

<ref name="text-relative-tab-stop-position-attr"/>

</define>

#### Ignore Case

The text:ignore-case attribute determines whether or not the capitalization of words is ignored. If the value is true, the capitalization is ignored and entries that are identical except for character case are listed as the same entries. If the value is false, the capitalization of words is not ignored.

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:ignore-case" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Main Entry Style Name

The text:main-entry-style-name attribute determines the character style to use for main entries. Sub entries are formatted using the default character style determined by the paragraph style of the entries.

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:main-entry-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Alphabetical Separators

The text:alphabetical-separators attribute determines whether or not entries beginning with the same letter are grouped and separated from the entries beginning with the next letter, and so on.

The value of this attribute can be true or false.

If the value is true, all entries beginning with the same letter are grouped together. The index contains headings for each section, for example, A for all entries starting with the letter A, B for all entries starting with the letter B, and so on.

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:alphabetical-separators" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Combining Entries

There are several options for dealing with the common situation where there are multiple index entries for the same word or phrase, as follows:

* Multiple entries for the same word can be combined into a single entry using the text:combine-entries attribute.
* The pages referenced by a combined entry can be formatted as:
  + As a range of numbers separated by a dash using the text:combine-entries-with-dash attribute
  + As the start number with a pp label, or the appropriate label for the chosen language, using the text:combine-entries-with-pp attribute

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:combine-entries" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="text:combine-entries-with-dash"

a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="text:combine-entries-with-pp" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

**Example**: Combining index entries

An index mark for the word “XML” occurs on pages 45, 46, 47, and 48. The entries can be formatted as follows:

|  |  |
| --- | --- |
| **Entry formatted as** | **Result** |
| Separate entries | XML 45 XML 46 etc. |
| Simple combined entries | XML 45, 46, 47, 48 |
| Entries combined with dash | XML 45-48 |
| Entries combined with pp | XML 45pp |

#### Use Keys as Entries

In addition to a keyword, index marks can have up to two keys. If the value of this attribute is true, the keys are used as additional entries. If the value of this attribute is false, the keys are used as sub entries.

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:use-keys-as-entries" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Capitalize Entries

The text:capitalize-entries attribute determines whether or not the entries in the index are to be capitalized.

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:capitalize-entries" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Comma Separated Entries

The text:comma-separated attribute specifies how to treat multiple index entries. Instead of listing each index entry on a separate line, multiple entries can be listed on a single line separated by a comma. If the value of this attribute is true, multiple entries are listed on a single line separated by a comma. By default, the value of this attribute is false and each index entry is displayed on a separate line.

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:comma-separated" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Sort country, Language, and Algorithm

If index entries are to be sorted, these attributes can be used to specify the sorting. The attributes country and language specify the sorting locale. For some locales, there are multiple sorting algorithms in use. In this case, the algorithm attribute can be used to specify an algorithm by name.

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<optional>

<attribute name="fo:language">

<ref name="languageCode"/>

</attribute>

</optional>

</define>

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<optional>

<attribute name="fo:country">

<ref name="countryCode"/>

</attribute>

</optional>

</define>

<define name="text-alphabetical-index-source-attrs" combine="interleave">

<optional>

<attribute name="text:sort-algorithm">

<ref name="string"/>

</attribute>

</optional>

</define>

### Auto Mark File

The alphabetical index supports a so-called auto mark file. Such a file contains a list of terms, and each occurrence of such a term is to be included in the alphabetical index. The alphabetical index mark file is declared as part of the text declarations (see section 4.8). The declaration element in an XLink, which points to the resource containing the list of terms.

<define name="text-alphabetical-index-auto-mark-file">

<element name="text:alphabetical-index-auto-mark-file">

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

</element>

</define>

### Alphabetical Index Entry Template

Alphabetical indexes support three levels; one level for the main index entry, and up to two additional levels for keys associated with the index entries. Alphabetical indexes also use an entry template for the alphabetical separator.

<define name="text-alphabetical-index-entry-template">

<element name="text:alphabetical-index-entry-template">

<ref name="text-alphabetical-index-entry-template-attrs"/>

<zeroOrMore>

<choice>

<ref name="text-index-entry-chapter"/>

<ref name="text-index-entry-page-number"/>

<ref name="text-index-entry-text"/>

<ref name="text-index-entry-span"/>

<ref name="text-index-entry-tab-stop"/>

</choice>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <text:alphabetical-index-entry-template> elements are:

* Template outline level
* Paragraph style

#### Template Outline Level

This attribute specifies whether the template applies to:

* One of the three levels 1,2,or 3

or

* The alphabetical separator

<define name="text-alphabetical-index-entry-template-attrs"

combine="interleave">

<attribute name="text:outline-level">

<choice>

<value>1</value>

<value>2</value>

<value>3</value>

<value>separator</value>

</choice>

</attribute>

</define>

#### Paragraph Style

The text:style-name attribute specifies the paragraph style to use for the template.

<define name="text-alphabetical-index-entry-template-attrs"

combine="interleave">

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</define>

## Bibliography

A bibliography index gathers its entries from bibliography index marks. The <text:bibliography> element represents a bibliography.

<define name="text-bibliography">

<element name="text:bibliography">

<ref name="sectionAttr"/>

<ref name="text-bibliography-source"/>

<ref name="text-index-body"/>

</element>

</define>

### Bibliography Index Source

The <text:bibliography-source> element specifies how the bibliography is generated.

<define name="text-bibliography-source">

<element name="text:bibliography-source">

<optional>

<ref name="text-index-title-template"/>

</optional>

<zeroOrMore>

<ref name="text-bibliography-entry-template"/>

</zeroOrMore>

</element>

</define>

### Bibliography Entry Template

Bibliography entry templates support entry elements for bibliography data, text spans, and tab stops. There is one entry template element for each type of entry.

<define name="text-bibliography-entry-template">

<element name="text:bibliography-entry-template">

<ref name="text-bibliography-entry-template-attrs"/>

<zeroOrMore>

<choice>

<ref name="text-index-entry-span"/>

<ref name="text-index-entry-tab-stop"/>

<ref name="text-index-entry-bibliography"/>

</choice>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <text:bibliography-entry-template> elements are:

* Bibliography type
* Paragraph style

#### Bibliography Type

This attribute specifies to which type of bibliographical entry the template applies. This attribute must be unique among all <text:bibliography-type> elements within the same parent element.

<define name="text-bibliography-entry-template-attrs" combine="interleave">

<attribute name="text:bibliography-type">

<ref name="text-bibliography-types"/>

</attribute>

</define>

#### Paragraph Style

The text:style-name attribute specifies the paragraph style to use for this template.

<define name="text-bibliography-entry-template-attrs" combine="interleave">

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</define>

## index source styles

Some indices can gather index entries from paragraphs formatted using certain paragraph styles. The <text:index-source-styles> element contains all of the <text:index-source-style> elements for a particular outline level. The text:outline-levels attribute determines at which outline level to list the index entries gathered from the respective paragraph styles. There can only be one <text:index-source-style> element for each outline level.

<define name="text-index-source-styles">

<element name="text:index-source-styles">

<attribute name="text:outline-level">

<ref name="positiveInteger"/>

</attribute>

<zeroOrMore>

<ref name="text-index-source-style"/>

</zeroOrMore>

</element>

</define>

### Index source style

All paragraphs formatted using the style or class specified in the <text:index-source-style> element are included in the index.

<define name="text-index-source-style">

<element name="text:index-source-style">

<attribute name="text:style-name">

<ref name="styleName"/>

</attribute>

<empty/>

</element>

</define>

## Index title template

The <text:index-title-template> element determines the style and content of the index title. There can only be one <text:index-title-template> element contained in a <text:table-of-content-source> element.

<define name="text-index-title-template">

<element name="text:index-title-template">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<text/>

</element>

</define>

## Index Template Entries

There are eight types of index entries, as follows:

* Chapter information
* Entry text
* Page number
* Fixed string
* Bibliography information
* Tab stop
* Hyperlink start and end

### Chapter Information

The <text:index-entry-chapter> element displays the chapter number of the index entry. The character style for the chapter number can be included in the index entry element as a text:style-name attribute.

<define name="text-index-entry-chapter">

<element name="text:index-entry-chapter">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<ref name="text-index-entry-chapter-attrs"/>

</element>

</define>

**Note**: This element can only display the chapter number. To display the chapter name, the <text:index-entry-text> elements must be used.

#### Display Chapter Format

The text:display attribute displays either the chapter number, the chapter name, or both.

<define name="text-index-entry-chapter-attrs">

<optional>

<attribute name="text:display" a:defaultValue="number">

<choice>

<value>name</value>

<value>number</value>

<value>number-and-name</value>

</choice>

</attribute>

</optional>

</define>

### Entry Text

The <text:index-entry-text> element displays the text of the index entry, for example, the chapter name if the entry is derived from a header or the phrase contained in the index mark if the entry is derived from an index mark. The character style for the entry text can be included in the index entry element as a text:style-name attribute.

<define name="text-index-entry-text">

<element name="text:index-entry-text">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</element>

</define>

### Page Number

The <text:index-entry-page-number> element displays the page number on which the index entry is located. The character style for the page number can be included in the index entry element as a text:style-name attribute.

<define name="text-index-entry-page-number">

<element name="text:index-entry-page-number">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</element>

</define>

### Fixed String

The <text:index-entry-span> element represents a fixed string within an index entry. The character style for the entry text can be included in the index entry element as a text:style-name attribute. Unlike the <text:span> element, the <text:index-entry-span> element does not have any child elements.

<define name="text-index-entry-span">

<element name="text:index-entry-span">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<text/>

</element>

</define>

### Bibliography Information

The <text:index-entry-bibliography> element introduces bibliography data into index entry templates.

<define name="text-index-entry-bibliography">

<element name="text:index-entry-bibliography">

<ref name="text-index-entry-bibliography-attrs"/>

</element>

</define>

The attributes that may be associated with the <text:index-entry-bibliography> element are:

* text:style-name attribute
* text:bibliography-data-field attribute

#### Text Style Name

The text:style-name attribute determines the style for display of the entry.

<define name="text-index-entry-bibliography-attrs" combine="interleave">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Bibliography Data Field Identifier

The text:bibliography-data-field attribute determines which part of the bibliography data field will be displayed.

<define name="text-index-entry-bibliography-attrs" combine="interleave">

<attribute name="text:bibliography-data-field">

<choice>

<value>address</value>

<value>annote</value>

<value>author</value>

<value>bibliography-type</value>

<value>booktitle</value>

<value>chapter</value>

<value>custom1</value>

<value>custom2</value>

<value>custom3</value>

<value>custom4</value>

<value>custom5</value>

<value>edition</value>

<value>editor</value>

<value>howpublished</value>

<value>identifier</value>

<value>institution</value>

<value>isbn</value>

<value>issn</value>

<value>journal</value>

<value>month</value>

<value>note</value>

<value>number</value>

<value>organizations</value>

<value>pages</value>

<value>publisher</value>

<value>report-type</value>

<value>school</value>

<value>series</value>

<value>title</value>

<value>url</value>

<value>volume</value>

<value>year</value>

</choice>

</attribute>

</define>

### Tab Stop

The <text:index-entry-tab-stop> element represents a tab stop within an index entry. It also contains the position information for the tab stop.

<define name="text-index-entry-tab-stop">

<element name="text:index-entry-tab-stop">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<ref name="text-index-entry-tab-stop-attrs"/>

</element>

</define>

The attributes that may be associated with the <text:index-entry-tab-stop> element are:

* style:leader-char
* style:type
* style:position

#### Leader Char

The style:leader-char attribute specifies the leader character.

<define name="text-index-entry-tab-stop-attrs" combine="interleave">

<optional>

<attribute name="style:leader-char">

<ref name="character"/>

</attribute>

</optional>

</define>

#### Tab Type and Position

The style:type attribute specifies the tab stop type. The <text:index-entry-tab-stop> element only supports two types of tab: left and right.

If the value of this attribute is left, the style:position attribute must also be used. Otherwise, this attribute must be omitted. The style:position attribute specifies the position of the tab. Depending on the value of the text:relative-tab-stop-position attribute in the <text:index-entry-config> element, the position of the tab is interpreted as being relative to the left margin or the left indent.

<define name="text-index-entry-tab-stop-attrs" combine="interleave">

<choice>

<attribute name="style:type">

<value>right</value>

</attribute>

<group>

<attribute name="style:type">

<value>left</value>

</attribute>

<attribute name="style:position">

<ref name="length"/>

</attribute>

</group>

</choice>

</define>

### Hyperlink Start and End

The <text:index-entry-link-start> and <text:index-entry-link-end> elements mark the start and end of a hyperlink index entry. The character style for the hyperlink can be included in the index entry element as a text:style-name attribute.

<define name="text-index-entry-link-start">

<element name="text:index-entry-link-start">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</element>

</define>

<define name="text-index-entry-link-end">

<element name="text:index-entry-link-end">

<optional>

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</element>

</define>

### Example of an Index Entry Configuration

The following is an example of the XML code for a table of contents called Table of Content with the following characteristics:

* It uses the top two outline levels.
* Each entry consists of the chapter number, a closing parenthesis, the chapter title, a tab stop, and the page number.
* For the top outline level, the page number is formatted using a style called Bold.
* For the second outline level, a bracket is used instead of a closing parenthesis.

Example: Table of Content

<text:table-of-content>

<text:table-of-content-source

text:outline-level="2"

text:use-index-marks="false"

text:index-scope="document">

<text:index-title-template text:style-name="Index 1">

Table of Content

</text:index-title-template>

<text:index-entry-template

text:outline-level="1"

text:style-name="Contents 1">

<text:index-entry-chapter text:display="number"/>

<text:index-entry-span>) </text:index-entry-span>

<text:index-entry-text/>

<text:index-entry-tab-stop style:type="right"/>

<text:index-entry-page-number text:style-name="bold"/>

</text:index-entry-template>

<text:index-entry-template

text:outline-level="2"

text:style-name="Contents 2">

<text:index-entry-chapter text:display="number"/>

<text:index-entry-span>] </text:index-entry-span>

<text:index-entry-text/>

<text:index-entry-tab-stop style:type="right"/>

<text:index-entry-page-number/>

</text:index-entry-template>

</text:table-of-content-source>

<text:table-of-content-body>

*[... header ...]*

<text:p text:style-name="*[...]*">1) Chapter

<text:tab-stop/><text:span stylename="bold"> 1 </text:span>

</text:p>

<text:p text:style-name="*[...]*">1.1] Subchapter

<text:tab-stop/>1

</text:p>

*[... more entries ...]*

</text:table-of-content-body>

</text:table-of-content>

1. Tables

This chapter describes the table structure that is used for tables that are embedded within text documents and for spreadsheets.

## Basic Table Model

The structure of OpenDocument tables is similar to the structure of [HTML4] or [XSL] tables, and like these tables, they can be nested.

The representation of tables is based on a grid of rows and columns. Rows take precedence over columns. The table is divided into rows and the rows are divided into cells. Each column includes a column description, but this description does not contain any cells.

Table rows may be empty, and different rows might contain a different number of table cells. This is not an error, but applications might resolve this in different ways. Spreadsheet applications typically operate on large tables that have a fixed application dependent row and column number, but may have an unused area. Only the used area of the table is saved in files. When loading a table with empty or incomplete rows into a spreadsheet application, empty rows typically introduce a default row (just as in an empty sheet), and incomplete rows are filled with empty cells (just like in an empty sheet).

All other applications typically have fixed size tables. Incomplete rows are basically rendered as if they had the necessary number of empty cells, and the same applies to empty rows. Empty cells typically occupy the space of an empty paragraph.

Rows and columns appear in **row groups** and **column groups**. These groups specify whether or not to repeat a row or column on the next page.

### Table Element

The table element is the root element for tables.

<define name="table-table">

<element name="table:table">

<ref name="table-table-attlist"/>

<optional>

<ref name="table-table-source"/>

</optional>

<optional>

<ref name="office-dde-source"/>

</optional>

<optional>

<ref name="table-scenario"/>

</optional>

<optional>

<ref name="office-forms"/>

</optional>

<optional>

<ref name="table-shapes"/>

</optional>

<ref name="table-columns-and-groups"/>

<ref name="table-rows-and-groups"/>

</element>

</define>

The content models for tables is rather complex. The details are explained in the section 8.2. For the moment, it can be assumed that table element's content are columns and row elements.

<define name="table-columns-and-groups">

<oneOrMore>

<choice>

<ref name="table-table-column-group"/>

<ref name="table-columns-no-group"/>

</choice>

</oneOrMore>

</define>

<define name="table-columns-no-group">

<choice>

<group>

<ref name="table-columns"/>

<optional>

<ref name="table-table-header-columns"/>

<optional>

<ref name="table-columns"/>

</optional>

</optional>

</group>

<group>

<ref name="table-table-header-columns"/>

<optional>

<ref name="table-columns"/>

</optional>

</group>

</choice>

</define>

<define name="table-columns">

<choice>

<ref name="table-table-columns"/>

<oneOrMore>

<ref name="table-table-column"/>

</oneOrMore>

</choice>

</define>

<define name="table-rows-and-groups">

<oneOrMore>

<choice>

<ref name="table-table-row-group"/>

<ref name="table-rows-no-group"/>

</choice>

</oneOrMore>

</define>

<define name="table-rows-no-group">

<choice>

<group>

<ref name="table-rows"/>

<optional>

<ref name="table-table-header-rows"/>

<optional>

<ref name="table-rows"/>

</optional>

</optional>

</group>

<group>

<ref name="table-table-header-rows"/>

<optional>

<ref name="table-rows"/>

</optional>

</group>

</choice>

</define>

<define name="table-rows">

<choice>

<ref name="table-table-rows"/>

<oneOrMore>

<optional>

<ref name="text-soft-page-break"/>

</optional>

<ref name="table-table-row"/>

</oneOrMore>

</choice>

</define>

#### Table Name

The table:name attribute specifies the name of a table.

<define name="table-table-attlist" combine="interleave">

<optional>

<attribute name="table:name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Table Style

The table:style-name attribute references a table style, i.e., an <style:style> element of type “table”. The table style describes the formatting properties of the table, such as width and background color. The table style can be either an automatic or common style.

<define name="table-table-attlist" combine="interleave">

<optional>

<attribute name="table:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

**Example: Table Style**

<style:style style:name="Table 1" style:family="table">

<style:table-properties style:width="12cm"

fo:background-color="light-grey"/>

</style:style>

<table:table table:name="Table 1" table:style-name="Table 1">

...

</table:table>

#### Protected

The table:protected attribute specifies whether or not a table is protected from editing. If the table is protected, the table:protection-key attribute can specify a password to prevent a user from resetting the protection flag to enable editing. If a table is protected, all of the table elements and the cell elements with a style:cell-protect attribute set to true are protected.

To avoid saving the password directly into the XML file, only a hash value of the password is stored within the table:protection-key attribute.

<define name="table-table-attlist" combine="interleave">

<optional>

<attribute name="table:protected" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="table:protection-key">

<text/>

</attribute>

</optional>

</define>

#### Print

The table:print attribute specifies if a table is printed. It takes a Boolean value. If its value is true, the table is printed, if its value is false, the table is not printed. The default value is true. The table:print attribute will be overwritten by the table:display attribute described in section 15.8.14. That is, if the table is not displayed, it also will not be printed.

If the table is printed, the table range that actually is printed can be specified by table:print-ranges attribute (see section 8.1.1:). If this attribute is not existing, the used area of the table will be printed.

<define name="table-table-attlist" combine="interleave">

<optional>

<attribute name="table:print" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Print Ranges

The table:print-ranges attribute specifies the print ranges of the table, i.e., the cells that should be printed. It contains a list of cell addresses or cell range addresses as described in section 8.3.1.

<define name="table-table-attlist" combine="interleave">

<optional>

<attribute name="table:print-ranges">

<ref name="cellRangeAddressList"/>

</attribute>

</optional>

</define>

#### Soft Page Breaks

The <text:soft-page-break> element represents a soft page break between two table rows. It may appear in front of <table:table-row> elements.

See section 2.3.1: for details regarding soft page breaks.

### Table Row

The <table:table-row> element represents a row in a table. It content are elements that specify the cells of the table row.

The <table:table-row> element is similar to the [XSL] <fo:table-row> element.

<define name="table-table-row">

<element name="table:table-row">

<ref name="table-table-row-attlist"/>

<oneOrMore>

<choice>

<ref name="table-table-cell"/>

<ref name="table-covered-table-cell"/>

</choice>

</oneOrMore>

</element>

</define>

#### Number of Rows Repeated

The table:number-rows-repeated attribute specifies the number of rows to which a row element applies. If two or more rows are adjoining, and have the same content and properties, and do not contain vertically merged cells, they may be described by a single <table:table-row> element that has a table:number-rows-repeated attribute with a value greater than 1.

<define name="table-table-row-attlist" combine="interleave">

<optional>

<attribute name="table:number-rows-repeated" a:defaultValue="1">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

#### Row Style

A table row style stores the formatting properties of a table row, such as height and background color. A row style is defined by a <style:style> element with a family attribute value of table-row. The table row style can be either an automatic or a common style. It is referenced by the table row's table:style-name attribute.

<define name="table-table-row-attlist" combine="interleave">

<optional>

<attribute name="table:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Default Cell Style

The table:default-cell-style-name attribute specifies a default cell style. Cells contained in the row that don't have a table:style-style name attribute use this default cell style.

The attribute is applied to cells that are defined by a <table:table-cell> element. It is typically not applied to table cells that spreadsheet application may display in addition to those defined in the document.

<define name="table-table-row-attlist" combine="interleave">

<optional>

<attribute name="table:default-cell-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Visibility

The table:visibility attribute specifies whether the row is visible, filtered, or collapsed. Filtered and collapsed rows are not visible. Filtered rows are invisible, because a filter is applied to the table that does not select the table row. Collapsed rows have been made invisible by invisible in the UI directly.

<define name="table-table-row-attlist" combine="interleave">

<optional>

<attribute name="table:visibility" a:defaultValue="visible">

<ref name="table-visibility-value"/>

</attribute>

</optional>

</define>

<define name="table-visibility-value">

<choice>

<value>visible</value>

<value>collapse</value>

<value>filter</value>

</choice>

</define>

Example: Table with three rows and three columns

This example shows the OpenDocument code for a table with three rows and three columns. The first two rows of the table have a blue background.

<style:style style:name="Table 1" style:family="table">

<style:table-properties style:width="12cm"   
 fo:background-color="light-grey"/>

</style:style>

<style:style style:name="Col1" style:family="table-column">

<style:table-column-properties style:column-width="2cm"/>

</style:style>

<style:style style:name="Col2" style:family="table-column">

<style:table-column-properties style:column-width="4cm"/>

</style:style>

<style:style style:name="Col3" style:family="table-column">

<style:table-column-properties style:column-width="6cm"/>

</style:style>

<style:style style:name="Row1" style:family="table-row">

<style:table-row-properties fo:background-color="blue"/>

</style:style>

<table:table table:name="Table 1" table:style-name="Table 1">

<table:table-columns>

<table:table-column table:style-name="Col1"/>

<table:table-column table:style-name="Col2"/>

<table:table-column table:style-name="Col3"/>

</table:table-columns>

<table:table-rows>

<table:table-row table:style-name="Row1">

...

</table:table-row>

<table:table-row table:style-name="Row1">

...

</table:table-row>

<table:table-row>

...

</table:table-row>

<table:table-rows>

</table:table>

### Table Cell

The <table:table-cell> and <table:covered-table-cell> elements specify the content of a table cells. They are contained in table row elements. A table cell can contain paragraphs and other text content as well as sub tables. Table cells may be empty.

The <table:table-cell> element is very similar to the table cell elements of [XSL] and [HTML4], and the rules regarding cells that span several columns or rows that exist in HTML and XSL apply to the OpenDocument specification as well. This means that there are no <table:table-cell> elements in the row/column grid for positions that are covered by a merged cell, that is, that are covered by a cell that spans several columns or rows. The <table:covered-table-cell> element exists to be able to specify cells for such positions . It has to appear wherever a position in the row/column grid is covered by a cell that spans several rows or columns. Its position in the grid is calculated by a assuming a column and row span of 1 for all cells regardless whether they are specified by a <table:table-cell> or a <table:covered-table-cell> element. The <table:covered-table-cell> is especially used by spreadsheet applications, where it is a common use case that a covered cell contains content.

<define name="table-table-cell">

<element name="table:table-cell">

<ref name="table-table-cell-attlist"/>

<ref name="table-table-cell-attlist-extra"/>

<ref name="table-table-cell-content"/>

</element>

</define>

<define name="table-covered-table-cell">

<element name="table:covered-table-cell">

<ref name="table-table-cell-attlist"/>

<ref name="table-table-cell-content"/>

</element>

</define>

<define name="table-table-cell-content">

<optional>

<ref name="table-cell-range-source"/>

</optional>

<optional>

<ref name="office-annotation"/>

</optional>

<optional>

<ref name="table-detective"/>

</optional>

<zeroOrMore>

<ref name="text-content"/>

</zeroOrMore>

</define>

#### Number of Cells Repeated

The table:number-columns-repeated attribute specifies the number of successive columns in which a cell is repeated. It can be used to describe two or more adjoining cells with a single cell element, if they meet the following conditions:

* The cells contain the same content and properties.
* The cells are not merged horizontally or vertically.

In this case, a table:number-columns-repeated attribute must be used to specify the number of successive columns in which the cell is repeated. This attribute is specified with either the <table:table-cell> element or the <table:covered-table-cell> element.

<define name="table-table-cell-attlist" combine="interleave">

<optional>

<attribute name="table:number-columns-repeated" a:defaultValue="1">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

#### Number of Rows and Columns Spanned

These attributes specify the number of rows and columns that a cell spans. These attributes can be used with the <table:table-cell> element only.

When a cell covers another cell because of a column or row span value greater than one, a <table:covered-table-cell> element must appear in the table to represent the covered cell.

<define name="table-table-cell-attlist-extra" combine="interleave">

<optional>

<attribute name="table:number-columns-spanned" a:defaultValue="1">

<ref name="positiveInteger"/>

</attribute>

</optional>

<optional>

<attribute name="table:number-rows-spanned" a:defaultValue="1">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

#### Cell Style

A table cell style stores the formatting properties of a cell, such as the following:

* Background color
* Number format
* Vertical alignment
* Borders

The table cell style can be either an automatic or a common style. The style is specified with a table:style-name attribute. If a cell does not have a cell style assigned, the application checks if a the current row has a default cell style assigned. If the current row does not have a default cell assigned style as well, the application checks if the current column has a default cell style assigned.

<define name="table-table-cell-attlist" combine="interleave">

<optional>

<attribute name="table:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Cell Content Validation

The table:content-validation-name attribute specifies if a cell contains a validity check. The value of this attribute is the name of a <table:content-validation> element. If the attribute is not present, the cell may have arbitrary content.

<define name="table-table-cell-attlist" combine="interleave">

<optional>

<attribute name="table:content-validation-name">

<ref name="string"/>

</attribute>

</optional>

</define>

See section 8.5.3 for more information on cell content validation and the <table:cell-content-validation> element.

#### Formula

Formulas allow calculations to be performed within table cells. Every formula should begin with a namespace prefix specifying the syntax and semantics used within the formula. Typically, the formula itself begins with an equal (=) sign and can include the following components:

* Numbers.
* Text.
* Named ranges.
* Operators.
* Logical operators.
* Function calls.
* Addresses of cells that contain numbers. The addresses can be relative or absolute, see section 8.3.1. Addresses in formulas start with a “[“ and end with a “]”. See sections 8.3.1 and 8.3.1 for information about how to address a cell or cell range.

The following is an example of a simple formula:

=sum([.A1:.A5])

This formula calculates the sum of the values of all cells in the range “.A1:.A5”. The function is “sum”. The parameters are marked by a “(“ at the start and a “)” at the end. If a function contains more than one parameter, the parameters are separated by a “;”.

The following is a variation of the formula shown above:

=sum([.A1];[.A2];[.A3];[.A4];[.A5])

The result of this formula is the same. The components used in the formula depend on the application being used.

The table:formula attribute contains a formula for a table cell.

<define name="table-table-cell-attlist" combine="interleave">

<optional>

<attribute name="table:formula">

<ref name="string"/>

</attribute>

</optional>

</define>

In addition to this, the calculated value of the formula is available as well. One of the following attributes represents the current value of the cell:

* office:value
* office:date-value
* office:time-value
* office:boolean-value
* office:string-value

#### Matrix

When an application is performing spreadsheet calculations, a connected range of cells that contains values is called a matrix. If the cell range contains *m* rows and *n* columns, the matrix is called an *m x n* matrix. The smallest possible matrix is a *1 x 2* or *2 x 1* matrix with two adjacent cells. To use a matrix in a formula, include the cell range address of the matrix in the formula. In a matrix formula, only special matrix operations are possible.

The number of rows and columns that a matrix spans are represented by the table:number-matrix-rows-spanned and table:number-matrix-columns-spanned attributes, which are attached to the cell elements.

<define name="table-table-cell-attlist-extra" combine="interleave">

<optional>

<attribute name="table:number-matrix-columns-spanned">

<ref name="positiveInteger"/>

</attribute>

</optional>

<optional>

<attribute name="table:number-matrix-rows-spanned">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

#### Value Type

The table:value-type attribute specifies the type of value that can appear in a cell. It may contain one of the following values:

* float, percentage or currency (numeric types)
* date
* time
* boolean
* string

<define name="table-table-cell-attlist" combine="interleave">

<optional>

<ref name="common-value-and-type-attlist"/>

</optional>

</define>

#### Cell Current Numeric Value

The office:value attribute specifies the current numeric value of a cell. This attribute is only evaluated for cells that contain the following data types:

* float
* percentage
* currency

#### Cell Current Currency

The tableoffice:currency attribute specifies the current currency value of a cell. The value of this attribute is usually currency information such as DEM or EUR. This attribute is only evaluated for cells whose data type is currency.

#### Cell Current Date Value

The office:date-value attribute specifies the current date value of a cell. This attribute is only evaluated for cells whose data type is date.

Some application support date and time values in addition to dates.

#### Cell Current Time Value

The office:time-value attribute specifies the current time value of a cell. This attribute is only evaluated for cells whose data type is time.

#### Cell Current Boolean Value

The office:boolean-value attribute specifies the current Boolean value of a cell. This attribute is only evaluated for cells whose data type is boolean.

#### Cell Current String Value

The office:string-value attribute specifies the current string value of a cell. This attribute is only evaluated for cells whose data type is string.

#### Table Cell Protection

The table:protected attribute protects the table cells. Users can not edit the content of a cell that is marked as protected.

<define name="table-table-cell-attlist" combine="interleave">

<optional>

<attribute name="table:protect" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

This attribute is not related to the table:protected attribute for table elements (see section 8.1.1) and the table:cell-protect attribute for table cell styles (see section 15.11.14).

## Advanced Table Model

### Column Description

Every column in a table has a column description element . It is similar to the [XSL] <fo:table-column> element, and its primary use is to reference a table column style that for instance specifies the table column's width.

<define name="table-table-column">

<element name="table:table-column">

<ref name="table-table-column-attlist"/>

<empty/>

</element>

</define>

#### Number of Columns Repeated

The attribute specifies the number of columns to which a column description applies. If two or more columns are adjoining, and have the same properties, this attribute allows to describe them with a single <table:table-column> element.

<define name="table-table-column-attlist" combine="interleave">

<optional>

<attribute name="table:number-columns-repeated" a:defaultValue="1">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

#### Column Style

A table column style stores the formatting properties of a table column, such as width and background color. It is specified by a <style:style> element with a family attribute value of table-column and can be either an automatic or a common style. The style of a column is specified using a table:style-name attribute.

<define name="table-table-column-attlist" combine="interleave">

<optional>

<attribute name="table:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Visibility

The table:visibility attribute specifies whether the column is visible, filtered, or collapsed. See section 8.1.2 for more details.

<define name="table-table-column-attlist" combine="interleave">

<optional>

<attribute name="table:visibility" a:defaultValue="visible">

<ref name="table-visibility-value"/>

</attribute>

</optional>

</define>

#### Default Cell Style

The table:default-cell-style-name attribute specifies the default cell style. Cells that don't have a table:style-style name attribute use this style when there is no default cell style specified for the cell's row as well.

The attribute is applied to cells that are defined by a <table:table-cell> element. It is typically not applied to table cells that spreadsheet application may display in addition to those defined in the document.

<define name="table-table-column-attlist" combine="interleave">

<optional>

<attribute name="table:default-cell-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

**Example: Table with three columns**

This example shows the OpenDocument code for a table with three columns.

<style:style style:name="Table 1" style:family="table">

<style:table-properties style:width="12cm"   
 fo:background-color="light-grey"/>

</style:style>

<style:style style:name="Col1" style:family="table-column">

<style:table-column-properties style:column-width="2cm"/>

</style:style>

<style:style style:name="Col2" style:family="table-column">

<style:table-column-properties style:column-width="4cm"/>

</style:style>

<style:style style:name="Col3" style:family="table-column">

<style:table-column-properties style:column-width="6cm"/>

</style:style>

<table:table table:name="Table 1" table:style-name="Table 1">

<table:table-columns>

<table:table-column table:style-name="Col1"/>

<table:table-column table:style-name="Col2"/>

<table:table-column table:style-name="Col3"/>

</table:table-columns>

...

</table:table>

### Header Columns

For accessibility purposes, header information is needed. Therefore, any columns designated as headers by the author must be tagged as such by encapsulating them within a <table:table-header-columns> element. Using style information only to designate header columns is insufficient.

If a table does not fit on a single page, table columns that are included in a <table:table-header-columns> element are automatically repeated on every page. A table must not contain more than one <table:table-header-columns> element, and a <table:table-columns> must not follow another <table:table-columns> element, with the only exception of tables that contain grouped columns (see 8.2.3). Such tables may contain more than one <table:table-header-columns> element, provided that they are contained in different column groups and the columns contained in the elements are adjacent.

Applications that do not support header columns have to process header column descriptions the same way as non header column descriptions.

The <table:table-header-columns> and <table:table-columns> element are very similar to [HTML4]'s <THEAD> and <TBODY> elements for rows.

<define name="table-table-header-columns">

<element name="table:table-header-columns">

<oneOrMore>

<ref name="table-table-column"/>

</oneOrMore>

</element>

</define>

<define name="table-table-columns">

<element name="table:table-columns">

<oneOrMore>

<ref name="table-table-column"/>

</oneOrMore>

</element>

</define>

### Column Groups

Adjacent table columns can be grouped with the element. Every group can contain a new group, columns, and column headers. A column group can be visible or hidden. Column groups can for instance used by spreadsheet applications to group columns that are summarized, so that the individual columns that contribute to the sum can be made invisible easily, but the sum remains visible.

If a set of header columns and a column group overlap, the header column group breaks the column header set. That is, the <table:table-column-group> may contain <table:table-header-columns> elements, but not vice versa.

<define name="table-table-column-group">

<element name="table:table-column-group">

<ref name="table-table-column-group-attlist"/>

<ref name="table-columns-and-groups"/>

</element>

</define>

#### Display

The table:display attribute specifies whether or not the group is visible.

<define name="table-table-column-group-attlist" combine="interleave">

<optional>

<attribute name="table:display" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Header Rows

For accessibility purposes, header information is needed. Therefore, any rows designated as headers by the author must be tagged as such by encapsulating them within a <table:table-header-rows> element. Using style information only to designate header rows is insufficient.

If a table does not fit on a single page, table rows that are included in a <table:table-header-rows> element are automatically repeated on every page. A table must not contain more than one <table:table-header-rows> element. The one exception to this is a table that contains grouped rows (see 8.2.5). Such a table may contain more than one <table:table-header-rows> element, provided that they are contained in different row groups and the rows contained in the elements are adjacent.

Applications that do not support header rows have to process header rows the same way as non header rows.

The <table:table-header-rows> and <table:table-rows> element are very similar to [HTML4]'s <THEAD> and <TBODY> elements.

<define name="table-table-header-rows">

<element name="table:table-header-rows">

<oneOrMore>

<optional>

<ref name="text-soft-page-break"/>

</optional>

<ref name="table-table-row"/>

</oneOrMore>

</element>

</define>

<define name="table-table-rows">

<element name="table:table-rows">

<oneOrMore>

<optional>

<ref name="text-soft-page-break"/>

</optional>

<ref name="table-table-row"/>

</oneOrMore>

</element>

</define>

### Row Groups

Adjacent table rows can be grouped with the <table:table-row-group> element. Every group can contain a new group, rows, and row headers. A row group can be visible or hidden. Row groups can for instance used by spreadsheet applications to group rows that are summarized, so that the individual rows that contribute to the sum can be made invisible easily, but the sum remains visible.

If a set of header rows and a row group overlap, the header row group breaks the row header set. That is, the <table:table-row-group> may contain <table:table-header-rows> elements, but not vice versa.

<define name="table-table-row-group">

<element name="table:table-row-group">

<ref name="table-table-row-group-attlist"/>

<ref name="table-rows-and-groups"/>

</element>

</define>

#### Display

The table:display attribute specifies whether or not the group is visible.

<define name="table-table-row-group-attlist" combine="interleave">

<optional>

<attribute name="table:display" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Subtables

If a table cell only contains a single table but no paragraphs or other content, this table can be specified as subtable. It then occupies the whole cell and no other content can appear in this cell.

The borders of a subtable merge with the borders of the cell that it resides in. A subtable does not contain any formatting properties. A subtable is essentially a container for some additional table rows that integrate seamlessly with the parent table.

A nested table is turned into a subtable with the attribute table:is-subtable that is attached to the table element. A nested table that is not a specified to be a subtable appears as a table within a table, that is, it has borders distinct from those of the parent cell and respects the padding of the parent cell.

<define name="table-table-attlist" combine="interleave">

<optional>

<attribute name="table:is-sub-table" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

Example of Representation of subtable

In the OpenDocument schema, this table can be represented in either of the ways detailed in Sample 1 and Sample 2.

| A1 | B1 | C1 |
| --- | --- | --- |
| A2 | |  |  | | --- | --- | | .B2.A1 | .B2.B1 | | .B2.A2 | | | |

*Sample 1*

Using cells that span several rows, the table is specified as follows:

<style:style style:name="Table 1" style:family="table">

<style:table-properties style:width="12cm"

fo:background-color="light-grey"/>

</style:style>

<style:style style:name="Col1" style:family="table-column">

<style:table-column-properties style:column-width="2cm"/>

</style:style>

<style:style style:name="Col2" style:family="table-column">

<style:table-column-properties style:column-width="4cm"/>

</style:style>

<style:style style:name="Col3" style:family="table-column">

<style:table-column-properties style:column-width="6cm"/>

</style:style>

<style:style style:name="Row1" style:family="table-row">

<style:table-row-properties fo:background-color="grey"/>

</style:style>

<style:style style:name="Cell1" style:family="table-cell">

<style:table-cell-properties fo:background-color="grey"/>

</style:style>

<table:table table:name="Table 1" table:style-name="Table 1">

<table:table-columns>

<table:table-column table:style-name="Col1"/>

<table:table-column table:style-name="Col2"/>

<table:table-column table:style-name="Col3"/>

</table:table-columns>

<table:table-header-rows>

<table:table-row table:style-name="Row1">

<table:table-cell>

<text:p text:style="Table Caption">

A1

</text:p>

</table:table-cell>

<table:table-cell>

<text:p text:style="Table Caption">

B1

</text:p>

</table:table-cell>

<table:table-cell>

<text:p text:style="Table Caption">

C1

</text:p>

</table:table-cell>

</table:table-row>

</table:table-header-rows>

<table:table-rows>

<table:table-row>

<table:table-cell table:number-rows-spanned="2"

table:style-name="Cell1">

<text:p text:style="Table Body">

A2

</text:p>

</table:table-cell>

<table:table-cell>

<text:p text:style="Table Body">

.B2.A1

</text:p>

</table:table-cell>

<table:table-cell>

<text:p text:style="Table Body">

.B2.B1

</text:p>

</table:table-cell>

</table:table-row>

<table:table-row>

<table:covered-table-cell/>

<table:table-cell table:number-columns-spanned="2">

<text:p text:style="Table Body">

.B2.A2

</text:p>

</table:table-cell>

<table:covered-table-cell/>

</table:table-row>

</table:table-rows>

</table:table>

*Sample 2*

Using sub tables, the table is specified as follows:

<style:style style:name="Table 1" style:family="table">

<style:table-properties fo:width="12cm" fo:background-color="light-grey"/>

</style:style>

<style:style style:name="Col1" style:family="table-column">

<style:table-column-properties style:column-width="2cm"/>

</style:style>

<style:style style:name="Col2" style:family="table-column">

<style:table-column-properties style:column-width="4cm"/>

</style:style>

<style:style style:name="Col3" style:family="table-column">

<style:table-column-properties style:column-width="6cm"/>

</style:style>

<style:style style:name="Row1" style:family="table-row">

<style:table-row-properties fo:background-color="grey"/>

</style:style>

<style:style style:name="Cell1" style:family="table-cell">

<style:table-cell-properties fo:background-color="grey"/>

</style:style>

<table:table table:name="Table 1" table:style-name="Table 1">

<table:table-columns>

<table:table-column table:style-name="Col1"/>

<table:table-column table:style-name="Col2"/>

<table:table-column table:style-name="Col3"/>

</table:table-columns>

<table:table-header-rows>

<table:table-row table:style-name="Row1">

<table:table-cell>

<text:p text:style="Table Caption">

A1

</text:p>

</table:table.cell>

<table:table-cell>

<text:p text:style="Table Caption">

B1

</text:p>

</table:table-cell>

<table:table-cell>

<text:p text:style="Table Caption">

C1

</text:p>

</table:table-cell>

</table:table-row>

</table:table-header-rows>

<table:table-rows>

<table:table-row>

<table:table-cell table:style-name="Cell1">

<text:p text:style="Table Body">

A2

</text:p>

</table:table-cell>

<table:table-cell table:number-columns-spanned="2">

<table:table is-subtable="true">

<table:table-columns>

<table:table-column table:style-name="Col2"/>

<table:table-column table:style-name="Col3"/>

</table:table-columns>

<table:rows>

<table:row>

<table:table-cell>

<text:p text:style="Table Body">

.B2.A1

</text:p>

</table:table-cell>

<table:table-cell>

<text:p text:style="Table Body">

.B2.B1

</text:p>

</table:table-cell>

</table:table-row>

<table:table-row>

<table:table-cell

table:number-columns-spanned="2">

<text:p text:style="Table Body">

.B2.A2

</text:p>

</table:table-cell>

<table:covered-table-cell/>

</table:table-row>

</table:table-rows>

</table:table>

</table:table-cell>

<table:covered-table-cell/>

</table:table-row>

</table:table-rows>

</table:table>

## Advanced Tables

### Referencing Table Cells

To reference table cells so called cell addresses are used. The structure of a cell address is as follows:

1. The name of the table.
2. A dot (.).
3. An alphabetic value representing the column. The letter A represents column 1, B represents column 2, and so on. AA represents column 27, AB represents column 28, and so on.
4. A numeric value representing the row. The number 1 represents the first row, the number 2 represents the second row, and so on.

This means that A1 represents the cell in column 1 and row 1. B1 represents the cell in column 2 and row 1. A2 represents the cell in column 1 and row 2.

For example, in a table with the name SampleTable the cell in column 34 and row 16 is referenced by the cell address SampleTable.AH16. In some cases it is not necessary to provide the name of the table. However, the dot must be present. When the table name is not required, the address in the previous example is .AH16.

The structure of the address of a cell in a subtable is as follows:

1. The address of the cell that contains the subtable.
2. A dot (.).
3. The address of the cell in the subtable.

For example, to reference the cell in column 1 and row 1 in a subtable that is called Subtable, and that is in column 34 and row 16 of the table SampleTable, the address is SampleTable.AH16.A1.

If the name of the table contains blanks, dots (.) or apostrophes ('), the name must be quoted with apostrophes ('). Any apostrophes in the name must be escaped by doubling ('').

E.g. 'Tom''s Table'.A1 for the cell A1 in the table named Tom's Table.

#### Absolute and relative cell addressing

Cells can be referenced by using either absolute addresses or relative addresses. When an operation is performed on a table cell, for example when a formula is copied, absolute cell references do not change; In contrast to this, relative cell references are adapted to the address of target cell of the copy operation. The previous example uses relative addressing.

To create an absolute address, a dollar sign ($) has to be placed before each table name, column reference, and row reference. For example, the absolute address of the previous example is $SampleTable.$AH$16. Absolute and relative references can be mixed within a single cell address. For example, SampleTable.AH$16 refers to a relative table and column, but to an absolute row. Absolute addresses must contain a table name. The differentiation between absolute and relative addressing is only necessary in some situations. Where a differentiation is not required, a cell reference without the dollar signs is used.

<define name="cellAddress">

<data type="string">

<param name="pattern">($?([^\. ']+|'([^']|'')+'))?\.$?[A-Z]+$?[0-9]+</param>

</data>

</define>

#### Cell Range Address

A cell range is a number of adjacent cells forming a rectangular shape. The rectangle stretches from the cell on the top left to the cell on the bottom right.

A cell range address references a cell range. It is constructed as follow:

1. The address of the cell at the top left of the range.
2. A colon (:).
3. The address of the cell at the bottom right of the range.

For example, the address .A1:.B2 references the cell range of cells from column 1 and row 1 to column 2 and row 2. The smallest range one can specify is a single cell. In this case, the range address is the same as the cell address.

<define name="cellRangeAddress">

<data type="string">

<param name="pattern">($?([^\. ']+|'([^']|'')+'))?\.$?[A-Z]+$?[0-9]+(:($?([^\. ']+|'([^']|'')+'))?\.$?[A-Z]+$?[0-9]+)?</param>

</data>

</define>

#### Cell Range Address List

A cell range address list is a list of cell ranges and cell addresses. Each item in the list is separated by a space. If table names used in the list contain a blank character, the table name has to be quoted within apostrophes (').

<define name="cellRangeAddressList">

<!-- Value is a space separated list of "cellRangeAddress" patterns -->

<data type="string"/>

</define>

### Linked Tables

If a table is linked to an original table, the information about the source table is contained in a <table:table-source> element. The attributes that may be associated with the <table:table-source> element are:

* Mode
* Table name
* URL
* Filter name
* Filter options
* Refresh delay

<define name="table-table-source">

<element name="table:table-source">

<ref name="table-table-source-attlist"/>

<ref name="table-linked-source-attlist"/>

<empty/>

</element>

</define>

#### Mode

The table:mode attribute specifies what data should be copied from the source table to the destination table. If the attribute's value is “copy-all” formulas and styles are copied. If the attribute's value is “copy-results-only”, only formula results and non calculated cell content will be copied.

<define name="table-table-source-attlist" combine="interleave">

<optional>

<attribute name="table:mode" a:defaultValue="copy-all">

<choice>

<value>copy-all</value>

<value>copy-results-only</value>

</choice>

</attribute>

</optional>

</define>

#### Table Name

The table:table-name attribute specifies the name of the table in the original document. If the table name is not specified, the first table in the document is used.

<define name="table-table-source-attlist" combine="interleave">

<optional>

<attribute name="table:table-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### URL

The original table is specified by a an XLink, where the xlink:href attribute specifies the URL of the document containing the original table.

<define name="table-linked-source-attlist" combine="interleave">

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onRequest">

<value>onRequest</value>

</attribute>

</optional>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

</define>

#### Filter Name

The table:filter-name attribute specifies the file type of the document containing the original table. The value of this attribute is application-specific.

<define name="table-linked-source-attlist" combine="interleave">

<optional>

<attribute name="table:filter-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Filter Options

The table:filter-options attribute specifies optional settings about the file type. The value of this attribute is application-specific.

<define name="table-linked-source-attlist" combine="interleave">

<optional>

<attribute name="table:filter-options">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Refresh Delay

The table:refresh-delay attribute specifies the time delay between refresh actions for the linked table.

<define name="table-linked-source-attlist" combine="interleave">

<optional>

<attribute name="table:refresh-delay">

<ref name="duration"/>

</attribute>

</optional>

</define>

### Scenario Tables

A scenario is an area of a table where data from other, so called scenario tables, is linked to temporarily. If several scenarios are defined for the same area, an user might choose between the scenarios. Whether a scenario table is visible itself is controlled by table's style. Only one scenario table can be active per table.

A table that contains a <table:scenario> represents a scenario table. The name of the table and the name of the scenario are the same. The scenario is displayed in the regular table preceding the scenario table. If a scenario table is existing for a table, a scenario is displayed on that table automatically. These means the the existence of a scenario table implies the existence of a scenario.

The attributes that may be associated with this element are:

* Scenario Ranges
* Is Active
* Display Border
* Border Color
* Copy Back
* Copy Styles
* Copy Formulas
* Comment
* Protected

<define name="table-scenario">

<element name="table:scenario">

<ref name="table-scenario-attlist"/>

<empty/>

</element>

</define>

#### Scenario Ranges

The table:scenario-ranges attribute specifies the table range that is displayed as a scenario. The value of this attribute is a list of cell range addresses.

<define name="table-scenario-attlist" combine="interleave">

<attribute name="table:scenario-ranges">

<ref name="cellRangeAddressList"/>

</attribute>

</define>

#### Is Active

The table:is-active attribute specifies whether or not the scenario that belongs to the scenario table is active.

<define name="table-scenario-attlist" combine="interleave">

<attribute name="table:is-active">

<ref name="boolean"/>

</attribute>

</define>

#### Display Border

The table:display-border attribute specifies whether or not to display a border around the scenario that belongs to the scenario table.

<define name="table-scenario-attlist" combine="interleave">

<optional>

<attribute name="table:display-border" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Border Color

The table:border-color attribute specifies the color of the border that is displayed around the scenario that belongs to the scenario table.

<define name="table-scenario-attlist" combine="interleave">

<optional>

<attribute name="table:border-color">

<ref name="color"/>

</attribute>

</optional>

</define>

#### Copy Back

The table:copy-back attribute specifies whether or not data is copied back into the scenario table if another scenario is activated.

<define name="table-scenario-attlist" combine="interleave">

<optional>

<attribute name="table:copy-back" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Copy Styles

The table:copy-styles attribute specifies whether or not styles are copied from the scenario table to the destination table together with the data.

<define name="table-scenario-attlist" combine="interleave">

<optional>

<attribute name="table:copy-styles" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Copy Formulas

The attribute specifies whether or not formulas are copied from the scenario table to the destination table. The value of this attribute can be true or false. If the value is true, the formulas are copied. If the value is false, only the values resulting from the formulas are copied.

<define name="table-scenario-attlist" combine="interleave">

<optional>

<attribute name="table:copy-formulas" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Comment

The table:comment attribute contains a comment about the scenario.

<define name="table-scenario-attlist" combine="interleave">

<optional>

<attribute name="table:comment">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Protected

The table:protected attribute specifies whether or not the data that is displayed within the scenario is protected from being edited. The attribute is only evaluated if the table on which the scenario displayed is also protected (see section 8.1.1).

<define name="table-scenario-attlist" combine="interleave">

<optional>

<attribute name="table:protected">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Shapes

The <table:shapes> element contains all graphic shapes with an anchor on the table this element is a child of. It is a container element and does not have any associated attributes.

<define name="table-shapes">

<element name="table:shapes">

<oneOrMore>

<ref name="shape"/>

</oneOrMore>

</element>

</define>

## Advanced Table Cells

### Linked Table Cells

A cell range can be linked to a database range or named range of another file. In this case the information about the original database range or named range is contained in a <table:cell-range-source> element that is contained in the element of the first cell of the range. The attributes that may be associated with this element are:

* Name
* Last size
* URL
* Filter name
* Filter options
* Refresh delay

<define name="table-cell-range-source">

<element name="table:cell-range-source">

<ref name="table-table-cell-range-source-attlist"/>

<ref name="table-linked-source-attlist"/>

<empty/>

</element>

</define>

#### Name

The table:name attribute specifies the name of the source database range or named range.

<define name="table-table-cell-range-source-attlist" combine="interleave">

<attribute name="table:name">

<ref name="string"/>

</attribute>

</define>

#### Last Size

The table:last-column-spanned and table:last-row-spanned attributes specify the last known size of the range. If the size of the range is changed since the last operation, the values of these attributes are incorrect.

<define name="table-table-cell-range-source-attlist" combine="interleave">

<attribute name="table:last-column-spanned">

<ref name="positiveInteger"/>

</attribute>

<attribute name="table:last-row-spanned">

<ref name="positiveInteger"/>

</attribute>

</define>

#### URL, Filter Name, Filter Options and Refresh Delay

The attributes xlink:href, xlink:type, xlink:actuate, table:filter-name and table:filter-options are the same as for linked tables. See section 8.3.2 for details.

### Cell Annotation

The OpenDocument format allows annotation to appear within table cells. See section 12.1 for details on annotations.

### Detective

The <table:detective> element has two purposes. One the one hand, it contains information about relations that exist between table cells because of formulas and that should be highlighted in the UI. On the other hand, the element contains information about cells that are highlighted currently in the UI either because of the relations mentioned above or because of error conditions.

<define name="table-detective">

<element name="table:detective">

<zeroOrMore>

<ref name="table-highlighted-range"/>

</zeroOrMore>

<zeroOrMore>

<ref name="table-operation"/>

</zeroOrMore>

</element>

</define>

The elements that can be contained in the <table:detective> element are:

* Detective Operation
* Highlighted range

### Detective Operation

The <table:operation> element specifies that certain relations that exist between the cell the element is a child of and other cells should be made visible or invisible in the UI. One and the same detective operation can be applied multiple times to the same cell. In this case, the second operation is applied to the resulting cells of the first operation and so on. This means that an operation not necessarily is applied to the cell the operation is defined in, but also to other cells, and that it therefor can interact with operations defined in other cells. This especially applies to operations that make relations invisible. To get a determinate behavior, operations have an index and are applied in the order of that index. The attributes associated with the <table:operation> element are:

* Name
* Index

<define name="table-operation">

<element name="table:operation">

<ref name="table-operation-attlist"/>

<empty/>

</element>

</define>

#### Name

The table:name attribute specifies the name of the detective operation. Possible names are trace-dependents , remove-dependents, trace-precedents, remove-precedents and trace-errors. trace-dependents and remove-dependents displays or hides cells that use the value of the current cell in their formula. Trace-precedents and remove-precedents displays or hides cells whose value is used in the formula of the current cell. Trace-errors displays cells that cause an error while calculating the result of the current cell's formula.

<define name="table-operation-attlist" combine="interleave">

<attribute name="table:name">

<choice>

<value>trace-dependents</value>

<value>remove-dependents</value>

<value>trace-precedents</value>

<value>remove-precedents</value>

<value>trace-errors</value>

</choice>

</attribute>

</define>

#### Index

The table:index attribute specifies the the order in which detective operations are applied.

<define name="table-operation-attlist" combine="interleave">

<attribute name="table:index">

<ref name="nonNegativeInteger"/>

</attribute>

</define>

### Highlighted Range

The <table:highlighted-range> element specifies a cell range that is highlighted in the UI either because of detective operations described above or because it contains an error or invalid data.

The information contained in this element is not guaranteed to be up to date but reflects the state that at the time the detective operations or error conditions have been calculated.

The attributes that can be associated with the <table:highlighted-range> element are:

* Cell Range Address
* Direction
* Contains Error
* Marked Invalid

<define name="table-highlighted-range">

<element name="table:highlighted-range">

<choice>

<group>

<ref name="table-highlighted-range-attlist"/>

</group>

<group>

<ref name="table-highlighted-range-attlist-invalid"/>

</group>

</choice>

<empty/>

</element>

</define>

#### Cell Range Address

The table:cell-range-address attribute contains the address of a range that is highlighted currently.

<define name="table-highlighted-range-attlist" combine="interleave">

<optional>

<attribute name="table:cell-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</optional>

</define>

#### Direction

The table:direction attribute specifies the direction of the relation between this cell and the highlighted range. The direction for instance might be visualized by an arrow.

<define name="table-highlighted-range-attlist" combine="interleave">

<attribute name="table:direction">

<choice>

<value>from-another-table</value>

<value>to-another-table</value>

<value>from-same-table</value>

</choice>

</attribute>

</define>

#### Contains Error

The table:contains-error attribute specifies whether or not the cell range contains an error.

<define name="table-highlighted-range-attlist" combine="interleave">

<optional>

<attribute name="table:contains-error" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Marked Invalid

The table:marked-invalid attribute specifies whether or not the current cell is marked invalid. This attribute cannot be used together with any other attributes.

<define name="table-highlighted-range-attlist-invalid" combine="interleave">

<attribute name="table:marked-invalid">

<ref name="boolean"/>

</attribute>

</define>

## Spreadsheet Document Content

### Document Protection

The structure of a spreadsheet document may be protected by using the table:structure-protected attribute, so that users can not insert, delete, move or rename the tables in the document. The optional table:protection-key attribute may be used to specify a password that prevents users from resetting the table protection flag to allow editing. To avoid saving the password directly into the XML file, only a hash value of the password is stored.

<define name="office-spreadsheet-attlist" combine="interleave">

<optional>

<attribute name="table:structure-protected" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="table:protection-key">

<ref name="string"/>

</attribute>

</optional>

</define>

### Calculation Settings

Spreadsheet documents contain settings that affect the calculation of formulas, for example the null date or iteration settings. These settings must be saved in the document in the <table:calculation-settings> element.

<define name="table-calculation-settings">

<element name="table:calculation-settings">

<ref name="table-calculation-setting-attlist"/>

<optional>

<ref name="table-null-date"/>

</optional>

<optional>

<ref name="table-iteration"/>

</optional>

</element>

</define>

The attributes that may be associated with the <table:calculation-settings> element are:

* Case sensitive
* Precision as shown
* Search criteria must apply to whole cell
* Automatic find labels
* Use regular expression
* Null year
* Null date
* Iteration

#### Case Sensitive

The table:case-sensitive attribute specifies whether or not to distinguish between upper and lower case when comparison operators are applied to cell content.

<define name="table-calculation-setting-attlist" combine="interleave">

<optional>

<attribute name="table:case-sensitive" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Precision as Shown

The table:precision-as-shown attribute specifies whether to perform a calculation using the rounded values displayed in the spreadsheet or using all of the digits in a number. If the value of this attribute is true, calculation are performed using the rounded values displayed in the spreadsheet. If the value of this attribute is false, calculations are performed using all of the digits in the number, but the result is still displayed as a rounded number.

<define name="table-calculation-setting-attlist" combine="interleave">

<optional>

<attribute name="table:precision-as-shown" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Search Criteria Must Apply to Whole Cell

The table:search-criteria-must-apply-to-whole-cell attribute specifies whether or not the specified search criteria, according to the regular expression used, must apply to the entire cell contents.

<define name="table-calculation-setting-attlist" combine="interleave">

<optional>

<attribute name="table:search-criteria-must-apply-to-whole-cell"

a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Automatic Find Labels

The table:automatic-find-labels attribute specifies whether or not to automatically find the labels of rows and columns.

<define name="table-calculation-setting-attlist" combine="interleave">

<optional>

<attribute name="table:automatic-find-labels" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Use Regular Expressions

The table:use-regular-expressions attribute specifies whether regular expressions are enabled for character string comparisons and when searching.

<define name="table-calculation-setting-attlist" combine="interleave">

<optional>

<attribute name="table:use-regular-expressions"

a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Null Year

The table:null-year attribute specifies the start year for year values that contain only two digits. All two digit year values are interpreted as a year that equals or follows the start year.

<define name="table-calculation-setting-attlist" combine="interleave">

<optional>

<attribute name="table:null-year" a:defaultValue="1930">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

#### Null Date

The <table:null-date> element specifies the null date. The null date is the date that results in the value “0” if a date value is converted into a numeric value. The null date is specified in the element's table:date-value attribute. Commonly used values are 12/30/1899, 01/01/1900, and 01/01/1904

<define name="table-null-date">

<element name="table:null-date">

<optional>

<attribute name="table:value-type" a:defaultValue="date">

<ref name="valueType"/>

</attribute>

</optional>

<optional>

<attribute name="table:date-value"

a:defaultValue="1899-12-30">

<ref name="date"/>

</attribute>

</optional>

<empty/>

</element>

</define>

#### Iteration

The <table:iteration> element enables formulas with iterative (or cyclic) references to be calculated after a specific number of iterations. Formulas with iterative references are repeated until the problem is solved. If this iterative calculations are not enabled, a formula with an iterative reference in a table causes an error message.

Iterative calculations are enabled and disabled with the table:status attribute. If iterative calculations are enabled, the table:steps attribute specifies the maximum number of iterations allowed. The table:maximum-difference attribute specifies the maximum difference allowed between two calculation results. The iteration is stopped if the result is less than the value of this attribute.

<define name="table-iteration">

<element name="table:iteration">

<optional>

<attribute name="table:status" a:defaultValue="disable">

<choice>

<value>enable</value>

<value>disable</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="table:steps" a:defaultValue="100">

<ref name="positiveInteger"/>

</attribute>

</optional>

<optional>

<attribute name="table:maximum-difference"

a:defaultValue="0.001">

<ref name="double"/>

</attribute>

</optional>

<empty/>

</element>

</define>

### Table Cell Content Validations

Table cell content validations specify validation rules for the content of table cells. The <table:content-validation> element specifies such a validation rule. All validation rules that exist in a document are contained <table:content-validations> element. The validation rules themselves are named and referenced from the table cell by its name.

<define name="table-content-validations">

<element name="table:content-validations">

<oneOrMore>

<ref name="table-content-validation"/>

</oneOrMore>

</element>

</define>

<define name="table-content-validation">

<element name="table:content-validation">

<ref name="table-validation-attlist"/>

<optional>

<ref name="table-help-message"/>

</optional>

<optional>

<choice>

<ref name="table-error-message"/>

<group>

<ref name="table-error-macro"/>

<optional>

<ref name="office-event-listeners"/>

</optional>

</group>

</choice>

</optional>

</element>

</define>

The attributes that may be associated with the <table:content-validation> element are:

* Name
* Condition
* Base cell address
* Allow empty cell
* Display list

#### Name

The table:name attribute specifies the name of the content validation. It is used to reference the validation rule from the cell the rule should applied to. The name is created automatically by the application.

<define name="table-validation-attlist" combine="interleave">

<attribute name="table:name">

<ref name="string"/>

</attribute>

</define>

#### Condition

The table:condition attribute specifies the condition that must evaluate to “true” for all cells the validation rule is applied to. The value of this attribute should be a namespace prefix, followed by a Boolean expression.

A typical syntax of the expression may be similar to the XPath syntax. The following are valid conditions:

* Condition ::= ExtendedTrueCondition | TrueFunction 'and' TrueCondition
* TrueFunction ::= cell-content-is-whole-number() | cell-content-is-decimal-number() | cell-content-is-date() | cell-content-is-time() | cell-content-is-text()
* ExtendedTrueCondition ::= ExtendedGetFunction | cell-content-text-length() Operator Value
* TrueCondition ::= GetFunction | cell-content() Operator Value
* GetFunction ::= cell-content-is-between(Value, Value) | cell-content-is-not-between(Value, Value)
* ExtendedGetFunction ::= cell-content-text-length-is-between(Value, Value) | cell-content-text-length-is-not-between(Value, Value) | cell-content-is-in-list( StringList )
* Operator ::= '<' | '>' | '<=' | '>=' | '=' | '!='
* Value ::= NumberValue | String | Formula
* StringList ::= StringList ';' String | String
* A Formula is a formula without an equals (=) sign at the beginning. See section 8.1.3 for more information.
* A String comprises one or more characters surrounded by quotation marks.
* A NumberValue is a whole or decimal number. It must not contain comma separators for numbers of 1000 or greater.

<define name="table-validation-attlist" combine="interleave">

<optional>

<attribute name="table:condition">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Base Cell Address

The table:base-cell-address attribute specifies the address of the base cell for relative addresses in formulas that occur within a condition. This attribute is only necessary when the condition contains a formula. The value of this attribute must be an absolute cell address that contains a table name.

<define name="table-validation-attlist" combine="interleave">

<optional>

<attribute name="table:base-cell-address">

<ref name="cellAddress"/>

</attribute>

</optional>

</define>

#### Allow Empty Cell

The table:allow-empty-cell attribute specifies whether or not a cell can be empty.

<define name="table-validation-attlist" combine="interleave">

<optional>

<attribute name="table:allow-empty-cell" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Display List

The table:display-list attribute specifies whether a list of values that occurs within a condition is displayed in the UI wile entering a cell value. The value of this attribute can be none, unsorted or sort-ascending.

* none: the list values are not displayed.
* unsorted: the list values are displayed in the order they occur in the condition.
* sort-ascending: the list values are displayed in ascending order.

<define name="table-validation-attlist" combine="interleave">

<optional>

<attribute name="table:display-list" a:defaultValue="unsorted">

<choice>

<value>none</value>

<value>unsorted</value>

<value>sort-ascending</value>

</choice>

</attribute>

</optional>

</define>

#### Help Message

The <table:help-message> element specifies a message to display if a user selects the cell. The element has an optional table:title attribute that specifies a title of the help message. It further has an optional table:display attribute that can be used to suppress the display of the message.

<define name="table-help-message">

<element name="table:help-message">

<optional>

<attribute name="table:title">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="table:display" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<zeroOrMore>

<ref name="text-p"/>

</zeroOrMore>

</element>

</define>

#### Error Message

The <table:error-message> element specifies a message to display if a user tries to enter invalid content into a cell i.e., content where the validation rule's condition evaluates to “false”. The element has an optional table:title attribute that specifies a title of the help message. It further has an optional table:display attribute that can be used to suppress the display of the message. The table:message-type attribute, that can take the values stop, warning, or information, specifies whether the message should be displayed as error (stop), warning (warning) or information only (information). In case the message is displayed as error, the operation that caused the validation check (for instance a cursor travel to leave the cell) is stopped.

<define name="table-error-message">

<element name="table:error-message">

<optional>

<attribute name="table:title">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="table:display" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="table:message-type" a:defaultValue="stop">

<choice>

<value>stop</value>

<value>warning</value>

<value>information</value>

</choice>

</attribute>

</optional>

<zeroOrMore>

<ref name="text-p"/>

</zeroOrMore>

</element>

</define>

#### Error Macro

As an alternative to displaying a message, a macro might be called if a cell contains invalid content. The macro in this case is specified by an <office:event-listeners> element as specified in section 12.4. The event name must be one that specifies an event that is called on invalid user input.

In addition to the <office:event-listeners> element, the <table:error-macro> element specifies whether the macro should be executed or not.

<define name="table-error-macro">

<element name="table:error-macro">

<optional>

<attribute name="table:execute" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</element>

</define>

### Label Ranges

Label ranges can be used to assign names to rows and columns, or to parts of rows and columns, where the names themselves are specified as the content of table cells. More precisely, the label range element <table:label-range> specifies a label cell range which contain the labels, and data cell range which specifies the rows or columns whose content is referenced by the labels.

There are two types of label ranges.

* Label ranges for columns
* Label ranges for rows.

The data cell range should have the same height and vertical position like the label cell range if row labels are specified, or should have the same width and horizontal position like the label range if column labels are specified. For information on defining a cell range, see section 8.3.1.

Labels can be used within formula like any other name. All label ranges that exist in a document are contained within a single <table:label-ranges> element.

<define name="table-label-ranges">

<element name="table:label-ranges">

<zeroOrMore>

<ref name="table-label-range"/>

</zeroOrMore>

</element>

</define>

<define name="table-label-range">

<element name="table:label-range">

<ref name="table-label-range-attlist"/>

<empty/>

</element>

</define>

#### Label Cell Range Address

The table:label-cell-range-address attribute specifies the cell range address of the labels.

<define name="table-label-range-attlist" combine="interleave">

<attribute name="table:label-cell-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</define>

#### Data Cell Range Address

The table:data-cell-range-address attribute specifies the cell range address of the data.

<define name="table-label-range-attlist" combine="interleave">

<attribute name="table:data-cell-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</define>

#### Orientation

The table:orientation attribute specifies the orientation of the label range. This attribute can have a value of column or row.

<define name="table-label-range-attlist" combine="interleave">

<attribute name="table:orientation">

<choice>

<value>column</value>

<value>row</value>

</choice>

</attribute>

</define>

### Named Expressions

The named expressions element <table:named-expressions> contains a collection of assignments of names to expressions, so that the names can be use to refer to the expression.

The following expression can get names:

* cell ranges.
* Other expressions, for example, parts of a formula.

<define name="table-named-expressions">

<element name="table:named-expressions">

<zeroOrMore>

<choice>

<ref name="table-named-range"/>

<ref name="table-named-expression"/>

</choice>

</zeroOrMore>

</element>

</define>

#### Named Range

The named range element <table:named-range> specifies a cell range that has a name assigned. For information on defining a cell range, see section 8.3.1.

The table:name attribute specifies the name of the range, and the table:cell-range-address attribute its address. The address can be either absolute or relative. If the cell range address is relative, the table:base-cell-address attribute must exist additionally. It specifies the base cell address for the cell range. This address must be absolute. Therefore a table name in the address is required, but the dollar signs that indicate an absolute address can be omitted.

An additional table:range-usable-as attribute specifies whether the name of the range can be used within the specification of a print range, a filter, a repeating row, or a repeat column. The value of this attribute can be either:

* none, or
* a space-separated list that consists of any of the values print-range, filter, repeat-row or repeat-column.

<define name="table-named-range">

<element name="table:named-range">

<ref name="table-named-range-attlist"/>

<empty/>

</element>

</define>

<define name="table-named-range-attlist" combine="interleave">

<attribute name="table:name">

<ref name="string"/>

</attribute>

<attribute name="table:cell-range-address">

<ref name="cellRangeAddress"/>

</attribute>

<optional>

<attribute name="table:base-cell-address">

<ref name="cellAddress"/>

</attribute>

</optional>

<optional>

<attribute name="table:range-usable-as" a:defaultValue="none">

<choice>

<value>none</value>

<list>

<oneOrMore>

<choice>

<value>print-range</value>

<value>filter</value>

<value>repeat-row</value>

<value>repeat-column</value>

</choice>

</oneOrMore>

</list>

</choice>

</attribute>

</optional>

</define>

#### Named Expression

The named expression element <table:named-expression> contains an expression with a name, for example, a part of a formula.

The table:name attribute specifies the name of the expression, and the table:expression attribute the expression itself. The expressions do not support the equal (=) sign as the first character. If the expression contains a named range or another named expression, the named range or named expression must be specified first, before the containing expression. If the expression contains a relative cell range address, the table:base-cell-address attribute must exist additionally. It specifies the base cell address for the cell range. This address must be absolute. Therefore a table name in the address is required, but the dollar signs that indicate an absolute address can be omitted.

<define name="table-named-expression">

<element name="table:named-expression">

<ref name="table-named-expression-attlist"/>

<empty/>

</element>

</define>

<define name="table-named-expression-attlist" combine="interleave">

<attribute name="table:name">

<ref name="string"/>

</attribute>

<attribute name="table:expression">

<ref name="string"/>

</attribute>

<optional>

<attribute name="table:base-cell-address">

<ref name="cellAddress"/>

</attribute>

</optional>

</define>

Example: Named expressions element with a named range and a named expression

<table:named-expressions>

<table:named-range table:name="sample1" table:cell-range-address=".C4"

table:base-cell-address="sampletable.F1" table:area-type="none"/>

<table:named-range table:name="sample2"

table:cell-range-address=".$D$3:.$K$8"

table:area-type="print-range filter"/>

<table:named-expression table:name="sample3"

table:expression="sum([.A1:.B3])"/>

</table:named-expressions>

## Database Ranges

A database range is a named area in a table where database operations, but also some other kind of operations like filtering and sorting, can be performed. The Database Ranges element <table:database-ranges> contains a collection of all database ranges defined in a document.

<define name="table-database-ranges">

<element name="table:database-ranges">

<zeroOrMore>

<ref name="table-database-range"/>

</zeroOrMore>

</element>

</define>

### Database Range

The <table:database-range> defines a single database range.

<define name="table-database-range">

<element name="table:database-range">

<ref name="table-database-range-attlist"/>

<optional>

<choice>

<ref name="table-database-source-sql"/>

<ref name="table-database-source-table"/>

<ref name="table-database-source-query"/>

</choice>

</optional>

<optional>

<ref name="table-filter"/>

</optional>

<optional>

<ref name="table-sort"/>

</optional>

<optional>

<ref name="table-subtotal-rules"/>

</optional>

</element>

</define>

#### Database Range Name

The table:name attribute specifies the name of the database range on which to perform operations. Within a single document, only one database range is allowed to have no name. This database range is usually automatically created by the application and is used to filter or sort data in a cell ranges without the user explicitly creating a database range.

<define name="table-database-range-attlist" combine="interleave">

<optional>

<attribute name="table:name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Is Selection

The table:is-selection attribute specifies whether the database range includes a complete database, or a selection of records from a database only.

<define name="table-database-range-attlist" combine="interleave">

<optional>

<attribute name="table:is-selection" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### On Update Keep Styles

The table:on-update-keep-styles attribute specifies the behavior if the database range is updated. If the attribute value is “true”, the cell styles that are assigned to the cells in the first non-label row of the database range are used for all rows with in the database range. If the attribute value is “false”, all cells in the database range get the default cell style of the document assigned.

<define name="table-database-range-attlist" combine="interleave">

<optional>

<attribute name="table:on-update-keep-styles" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### On Update Keep Size

The table:on-update-keep-size attribute specifies the behavior of the database range if the size of the data in the data source changes. If the attribute value is true, the range retains its size. If the attribute value is false, the range does not retain its size.

<define name="table-database-range-attlist" combine="interleave">

<optional>

<attribute name="table:on-update-keep-size" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Has Persistent Data

The table:has-persistent-data attribute specifies whether the current data in a database range is saved when the document itself is saved.

<define name="table-database-range-attlist" combine="interleave">

<optional>

<attribute name="table:has-persistent-data" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Orientation

The table:orientation attribute specifies the orientation of the database range. The values of this attribute are row and column. The orientation is for instance used when sorting database ranges (see 8.6.5). If the orientation is row, the sorting takes places for rows, otherwise for columns.

<define name="table-database-range-attlist" combine="interleave">

<optional>

<attribute name="table:orientation" a:defaultValue="row">

<choice>

<value>column</value>

<value>row</value>

</choice>

</attribute>

</optional>

</define>

#### Contains Header

The table:contains-header attribute specifies whether or not the the content of the database range's first row or column should be used to specify labels. If the attribute's value is true, the content of the first cell within a row or column can be used to reference the whole row or column within many spreadsheet operations, for instance from within data pilots.

<define name="table-database-range-attlist" combine="interleave">

<optional>

<attribute name="table:contains-header" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Display Filter Buttons

The table:display-filter-buttons buttons attribute specifies whether or not to display filter buttons. Filter buttons are list box controls displayed in the label cells whose list entries are the values that exist in the labeled row or column. Selecting one of these entries equals applying a filter to the database range that selects all row or columns where the cells in the labeled row or column have the selected value.

<define name="table-database-range-attlist" combine="interleave">

<optional>

<attribute name="table:display-filter-buttons"

a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Target Range Address

The table:target-range-address attribute specifies the cell range address of the database range. A differentiation between absolute and relative addresses is not possible. Therefore, a table name must be specified in the address and dollar signs are ignored.

<define name="table-database-range-attlist" combine="interleave">

<attribute name="table:target-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</define>

#### Refresh Delay

The table:refresh-delay attribute specifies a time delay between automatic refresh actions.

<define name="table-database-range-attlist" combine="interleave">

<optional>

<attribute name="table:refresh-delay">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Database Source SQL

The <table:database-source-sql> element describes an SQL database that contains the source data of the database range.

<define name="table-database-source-sql">

<element name="table:database-source-sql">

<ref name="table-database-source-sql-attlist"/>

<empty/>

</element>

</define>

#### Database Name

A table:database-name attribute specifies the name of the SQL database where the data is imported from.

<define name="table-database-source-sql-attlist" combine="interleave">

<attribute name="table:database-name">

<ref name="string"/>

</attribute>

</define>

#### SQL Statement

An table:sql-statement attribute specifies the SQL statement to use when importing data from an SQL database.

<define name="table-database-source-sql-attlist" combine="interleave">

<attribute name="table:sql-statement">

<ref name="string"/>

</attribute>

</define>

#### Parse SQL Statement

A table:parse-sql-statement attribute specifies whether or not the application will parse SQL statements.

<define name="table-database-source-sql-attlist" combine="interleave">

<optional>

<attribute name="table:parse-sql-statement" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Database Source Table

The database source table element <table:database-source-table> specifies that the source data of the database range is stored in a database table.

<define name="table-database-source-query">

<element name="table:database-source-table">

<ref name="table-database-source-table-attlist"/>

<empty/>

</element>

</define>

#### Database Name

The table:database-name name attribute specifies the name of the database where the data is imported from.

<define name="table-database-source-table-attlist" combine="interleave">

<attribute name="table:database-name">

<ref name="string"/>

</attribute>

</define>

#### Table Name

A table:database-table-name attribute specifies the database table that data is imported from.

<define name="table-database-source-table-attlist" combine="interleave">

<attribute name="table:database-table-name">

<ref name="string"/>

</attribute>

</define>

### Database Source Query

The database source query element <table:database-source-query> specifies that the source data of the database range is is the result of a database query.

<define name="table-database-source-table">

<element name="table:database-source-query">

<ref name="table-database-source-query-attlist"/>

<empty/>

</element>

</define>

#### Database Name

A table:database-name attribute specifies the name of the database that data is imported from.

<define name="table-database-source-query-attlist" combine="interleave">

<attribute name="table:database-name">

<ref name="string"/>

</attribute>

</define>

#### Query Name

A table:query-name attribute specifies the query to perform on the database whose data is being imported.

<define name="table-database-source-query-attlist" combine="interleave">

<attribute name="table:query-name">

<ref name="string"/>

</attribute>

</define>

### Sort

The sort element <table:sort> describes the sort keys that should be applied to a database range.

<define name="table-sort">

<element name="table:sort">

<ref name="table-sort-attlist"/>

<oneOrMore>

<ref name="table-sort-by"/>

</oneOrMore>

</element>

</define>

#### Bind Styles to Content

The table:bind-styles-to-content attribute specifies whether or not cells retain their style attributes after a sort operation.

<define name="table-sort-attlist" combine="interleave">

<optional>

<attribute name="table:bind-styles-to-content" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Target Range Address

If the optional table:target-range-address attribute is present, the result of the sort is copied into the specified cell range rather than in the source cell range specified by the database range. A differentiation between absolute and relative addresses is not possible. Therefore, a table name has to exist in the address and dollar signs are ignored.

<define name="table-sort-attlist" combine="interleave">

<optional>

<attribute name="table:target-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</optional>

</define>

#### Case Sensitive

The table:case-sensitive attribute specifies whether or not the sort operation is case sensitive.

<define name="table-sort-attlist" combine="interleave">

<optional>

<attribute name="table:case-sensitive" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Language

The table:language attribute specifies the natural language in which the comparison will occur.

<define name="table-sort-attlist" combine="interleave">

<optional>

<attribute name="table:language">

<ref name="languageCode"/>

</attribute>

</optional>

</define>

#### Country

The table:country attribute specifies the country specific rules to be used in string comparisons for a particular natural language.

<define name="table-sort-attlist" combine="interleave">

<optional>

<attribute name="table:country">

<ref name="countryCode"/>

</attribute>

</optional>

</define>

#### Algorithm

The table:algorithm attribute specifies the algorithm used to compare sort keys. The attribute's value is a an application but also language and country specific sort algorithm name like “phonetic (alphanumeric first)”. To avoid name clashed between different applications, the name should start with a namespace prefix

<define name="table-sort-attlist" combine="interleave">

<optional>

<attribute name="table:algorithm">

<ref name="string"/>

</attribute>

</optional>

</define>

### Sort By

The sort by element <table:sort-by> specifies a key or field to sort, the data type of this field, and how to sort it.

<define name="table-sort-by">

<element name="table:sort-by">

<ref name="table-sort-by-attlist"/>

<empty/>

</element>

</define>

#### Field Number

The table:field-number number attribute specifies the row or column number to sort by. It is the number of a row or column within the database range.

<define name="table-sort-by-attlist" combine="interleave">

<attribute name="table:field-number">

<ref name="nonNegativeInteger"/>

</attribute>

</define>

#### Data Type

The table:data-type attribute specifies the data type of the field to be sorted. Its value can be text, number, automatic or the name of user defined sort order. If the attribute value is automatic, the application must determine what type of data is in the field. User defined sort orders are for instance lists of names of months. Specifying user defined sort orders is application specific.

<define name="table-sort-by-attlist" combine="interleave">

<optional>

<attribute name="table:data-type" a:defaultValue="automatic">

<choice>

<value>text</value>

<value>number</value>

<value>automatic</value>

<ref name="string"/>

</choice>

</attribute>

</optional>

</define>

#### Order

The table:order attribute specifies whether to sort the data in ascending or descending order.

<define name="table-sort-by-attlist" combine="interleave">

<optional>

<attribute name="table:order" a:defaultValue="ascending">

<choice>

<value>ascending</value>

<value>descending</value>

</choice>

</attribute>

</optional>

</define>

### Subtotal Rules

The subtotal rules element <table:subtotal-rules> specifies that provisional results (called subtotals) should be calculated for a database range. It contains information about the row or column provisional results should be calculated for, and also how these results are calculated. To calculate provisional results, the cell values of a row or column a grouped by their value, that is, all cells with the same content in the same field form a group. A provisional result is calculated and displayed at the end of each group.

<define name="table-subtotal-rules">

<element name="table:subtotal-rules">

<ref name="table-subtotal-rules-attlist"/>

<optional>

<ref name="table-sort-groups"/>

</optional>

<zeroOrMore>

<ref name="table-subtotal-rule"/>

</zeroOrMore>

</element>

</define>

#### Bind Styles To Content

The table:bind-styles-to-content attribute specifies whether or not cells retain their style after a subtotal calculation. This attribute is only evaluated if the table:sort-groups element is present.

<define name="table-subtotal-rules-attlist" combine="interleave">

<optional>

<attribute name="table:bind-styles-to-content" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Case Sensitive

The table:case-sensitive attribute specifies whether or not the case of characters is important when comparing entries, for example, when sorting groups.

<define name="table-subtotal-rules-attlist" combine="interleave">

<optional>

<attribute name="table:case-sensitive" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Page Breaks On Group Change

The table:page-breaks-on-group-change on group change attribute specifies whether or not to insert a page break after the subtotal for each group.

<define name="table-subtotal-rules-attlist" combine="interleave">

<optional>

<attribute name="table:page-breaks-on-group-change"

a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Subtotal Sort Groups

The optional sort groups element <table:sort-groups> specifies that columns or rows are sorted before grouping them, and how to sort them. It belongs to the subtotal rules element, see section 8.6.7.

<define name="table-sort-groups">

<element name="table:sort-groups">

<ref name="table-sort-groups-attlist"/>

<empty/>

</element>

</define>

#### Data Type

The table:data-type attribute specifies the data type of the column or row group to sort. See section 8.6.6 for details.

<define name="table-sort-groups-attlist" combine="interleave">

<optional>

<attribute name="table:data-type" a:defaultValue="automatic">

<choice>

<value>text</value>

<value>number</value>

<value>automatic</value>

<ref name="string"/>

</choice>

</attribute>

</optional>

</define>

#### Order

The table:order attribute specifies whether to sort the group data in ascending or descending order. See section 8.6.6 for details.

<define name="table-sort-groups-attlist" combine="interleave">

<optional>

<attribute name="table:order" a:defaultValue="ascending">

<choice>

<value>ascending</value>

<value>descending</value>

</choice>

</attribute>

</optional>

</define>

### Subtotal Rule

The subtotal rule element <table:subtotal-rule> describes how to calculate the subtotals for a certain row or column. The rule contains the group field number, which specifies the column group for which the rule is used, and one or more subtotal fields, which specify a row a column where subtotals should be calculated as well as the function to use for the calculation.

<define name="table-subtotal-rule">

<element name="table:subtotal-rule">

<ref name="table-subtotal-rule-attlist"/>

<zeroOrMore>

<ref name="table-subtotal-field"/>

</zeroOrMore>

</element>

</define>

#### Group By Field Number

The table:group-by-field-number attribute specifies the field, for example, a column, that is to be grouped. It is the number of a row or column within the database range.

<define name="table-subtotal-rule-attlist" combine="interleave">

<attribute name="table:group-by-field-number">

<ref name="nonNegativeInteger"/>

</attribute>

</define>

### Subtotal Field

The subtotal field element <table:subtotal-field> contains the field number and the function that is used to calculate a provisional result.

<define name="table-subtotal-field">

<element name="table:subtotal-field">

<ref name="table-subtotal-field-attlist"/>

<empty/>

</element>

</define>

#### Field Number

The table:field-number attribute specifies the row or column a subtotal should be calculated for. It is the number of a row or column within the database range.

<define name="table-subtotal-field-attlist" combine="interleave">

<attribute name="table:field-number">

<ref name="nonNegativeInteger"/>

</attribute>

</define>

#### Function

The table:function attribute specifies what kind of subtotals to calculate. The following are possible values for this attribute: auto, average, count, countnums, max, min, product, stdev, stdevp, sum, var and varp.

<define name="table-subtotal-field-attlist" combine="interleave">

<attribute name="table:function">

<choice>

<value>auto</value>

<value>average</value>

<value>count</value>

<value>countnums</value>

<value>max</value>

<value>min</value>

<value>product</value>

<value>stdev</value>

<value>stdevp</value>

<value>sum</value>

<value>var</value>

<value>varp</value>

<ref name="string"/>

</choice>

</attribute>

</define>

**Example: Subtotal field**

<table:database-range table:range-position="sampletable.A1:sampletable.G20" table:name="sample">

<table:database-source-table table:database-name="sampleDB" table:table-name="sampleTable"/>

<table:filter ...>

...

</table:filter>

<table:sort>

<table:sort-by table:field-number=1/>

</table:sort>

<table:subtotal-rules>

<table:sort-groups/>

<table:subtotal-rule table:column-group "3">

<table:subtotal-field table:field-number="1"

table:function="sum"/>

</table:subtotal-rule>

</table:subtotal-rules>

</table:database-range>

## Filters

Filters specify that only rows that match certain conditions should be visible

### Table Filter

The table filter element <table:filter> describes how the data contained in a database range or data pilot tables is filtered. The condition specified in the element are applied to all rows specified in the database range or the data pilot table. Rows where the condition does not evaluate to true are made invisible.

<define name="table-filter">

<element name="table:filter">

<ref name="table-filter-attlist"/>

<choice>

<ref name="table-filter-condition"/>

<ref name="table-filter-and"/>

<ref name="table-filter-or"/>

</choice>

</element>

</define>

#### Target Range Address

If the optional table:target-range-address attribute is present, the result of the filter is copied into the specified cell range but all table rows remain visible. If the attribute is not present, the rows that do not match the filter conditions are not displayed. A differentiation between absolute and relative addresses is not possible. Therefore, a table name has to exist in the address and dollar signs are ignored.

<define name="table-filter-attlist" combine="interleave">

<optional>

<attribute name="table:target-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</optional>

</define>

#### Condition Source

The table:condition-source attribute specifies whether the condition is contained in the filter or encoded in a table range. If the value is self the condition is specified by the <table:filter> element's child elements. If the value is cell-range the condition is encoded into the cell range specified by the table:condition-source-range-address attribute.

<define name="table-filter-attlist" combine="interleave">

<optional>

<attribute name="table:condition-source" a:defaultValue="self">

<choice>

<value>self</value>

<value>cell-range</value>

</choice>

</attribute>

</optional>

</define>

#### Condition Source Range Address

The table:condition-source-range-address attribute specifies a cell range that contains encoded conditions. The first row of the cell range has to contain the labels of the columns whose content should be filtered. The following rows contain conditions that have to evaluate to true for the cells contained in the columns. The conditions in each row are connected by an “and” operation, while the rows are connected by an “or” operation. This means that a row is of the source table is displayed if there is at least one row in the condition range where all conditions evaluate to true if they are applied to the columns specified in the first row of the condition range.

Example: If the condition source range is E1:F3 (shown yellow) and the source range is A1:C3 (shown green), only rows 2 and 3 are displayed.

|  | A | B | C | D | E | F | G | G | I |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 1 | 3 | 4 |  | A | B |  |  |  |
| 2 | 1 | 5 | 6 |  | =1 | =5 |  |  |  |
| 3 | 2 | 8 | 9 |  | >=2 |  |  |  |  |

Row 2 is displayed because the cell in column A has the value 1 and the cell in column B the value 5, so all conditions of the 2nd row of the condition range evaluate to true. Row 3 is displayed because the cell in column A is larger or equal than 2, and therefor the only condition in the the 3rd row of the condition range evaluates to true.

<define name="table-filter-attlist" combine="interleave">

<optional>

<attribute name="table:condition-source-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</optional>

</define>

#### Display Duplicates

The table:display-duplicates attribute specifies whether or not to display duplicate matches in the result.

<define name="table-filter-attlist" combine="interleave">

<optional>

<attribute name="table:display-duplicates" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Filter And

The <table:filter-and> element specifies that the logical operator AND is applied to the conditions specified by the element's child elements.

<define name="table-filter-and">

<element name="table:filter-and">

<oneOrMore>

<choice>

<ref name="table-filter-or"/>

<ref name="table-filter-condition"/>

</choice>

</oneOrMore>

</element>

</define>

### Filter Or

The <table:filter-or> element specifies that the logical operator OR is applied to the conditions specified by the element's child elements.

<define name="table-filter-or">

<element name="table:filter-or">

<oneOrMore>

<choice>

<ref name="table-filter-and"/>

<ref name="table-filter-condition"/>

</choice>

</oneOrMore>

</element>

</define>

### Filter Condition

The table <table:filter-condition> element describes a single condition to apply in a filter operation.

<define name="table-filter-condition">

<element name="table:filter-condition">

<ref name="table-filter-condition-attlist"/>

<empty/>

</element>

</define>

#### Field Number

The field number attribute table:field-number specifies which field to use for the condition. A field number is the number of a row or column in the source range of the filter.

<define name="table-filter-condition-attlist" combine="interleave">

<attribute name="table:field-number">

<ref name="nonNegativeInteger"/>

</attribute>

</define>

#### Value

The table:value attribute specifies a value for the filter condition.

<define name="table-filter-condition-attlist" combine="interleave">

<attribute name="table:value">

<ref name="string"/>

</attribute>

</define>

#### Operator

The operator attribute table:operator specifies what operator to use in the filter condition. This means that each cell contained in the columns specified by the field number (i.e., the table:field-number attribute) is compared with the value (i.e., the table:value attribute) using the given operator. The result of this comparison is the result of the filter sub-conditions specified by the <table:filter-condition> element.

The operators may or may not make use of regular expressions. The operators that use regular expressions are the following:

* match (matches)
* !match (does not match)

In both case, the table:value attribute contains the regular expression that the table cells have to match or must not match.

The relational operators that do not use regular expressions are:

* = (Equal to)
* != (Not equal to)
* < (Less than)
* > (Greater than)
* <= (Less than or equal to)
* >= (Greater than or equal to)

In addition, operators “empty”, “!empty”, “bottom values”, “top values”, “bottom percent”, and “top percent” can be used. To filter for example the lowest and highest percentage values, the latter two operators can be used.

<define name="table-filter-condition-attlist" combine="interleave">

<attribute name="table:operator">

<ref name="string"/>

</attribute>

</define>

#### Case Sensitive

The table:case-sensitive case sensitive attribute determines whether a filter condition is case sensitive.

<define name="table-filter-condition-attlist" combine="interleave">

<optional>

<attribute name="table:case-sensitive" a:defaultValue="false">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Data Type

The table:data-type attribute specifies whether comparison shall take place as text or as numeric values.

<define name="table-filter-condition-attlist" combine="interleave">

<optional>

<attribute name="table:data-type" a:defaultValue="text">

<choice>

<value>text</value>

<value>number</value>

</choice>

</attribute>

</optional>

</define>

**Example:Representation of a filter**

<filter>

<filter-or>

<filter-and>

<filter-condition table:field-number=1 table:operator="="

table:value="Doe"/>

<filter-condition table:field-number=2 table:operator="="

table:value="John"/>

</filter-and>

<filter-and>

<filter-condition table:field-number=1 table:operator="="

table:value="Burns"/>

<filter-condition table:field-number=2 table:operator="="

table:value="Michael"/>

</filter-and>

</filter-or>

</filter>

## Data Pilot Tables

Data pilot tables allow it to analyze and evaluate data contained in spreadsheet tables. The data pilot tables element <table:data-pilot-tables> contains the collection of all data pilot tables within a document.

<define name="table-data-pilot-tables">

<element name="table:data-pilot-tables">

<zeroOrMore>

<ref name="table-data-pilot-table"/>

</zeroOrMore>

</element>

</define>

### Data Pilot Table

The <table:data-pilot-table> specifies a single data pilot table. Within data pilot tables, all combinations of values that exist in selected columns are collected, and for each of these combinations a formula is applied to the cells of other columns.

Example: Given is the following source table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | A | B | C | D |  |
| 1 | **Article** | **City** | **Country** | **Amount** | **Price** |
| 2 | Main Unit | Hamburg | Germany | 1 | 12 |
| 3 | Monitor | Hamburg | Germany | 2 | 15 |
| 4 | Printer | Paris | France | 4 | 13 |
| 5 | Monitor | Paris | France | 2 | 14 |
| 6 | Main Unit | Paris | France | 1 | 12 |
| 7 | Monitor | Hamburg | Germany | 2 | 10 |
| 8 | Printer | Paris | France | 2 | 16 |

The following data pilot table groups the source table by the columns “County”, “City” and “Article” and calculates the sum of the “Amount” as well as of the “Price” columns for each combinations of values of these three columns. The values of the Country and City columns are shown in columns, while the ones of the Article columns are shown in rows.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Article |  |  |  |
| Country | City | Data | Main Unit | Monitor | Printer | **Total** |
| France | Paris | Sum - Amount | 1 | 2 | 6 | **9** |
|  |  | Sum - Price | 12 | 14 | 29 | **55** |
| Germany | Hamburg | Sum - Amount | 1 | 4 |  | **5** |
|  |  | Sum - Price | 12 | 25 |  | **37** |
| **Total sum - Amount** |  |  | **2** | **6** | **6** | **14** |
| **Total sum - Price** |  |  | **24** | **39** | **29** | **92** |

The columns that are used for grouping (here “County”, “City” and “Article”) are called category columns. The columns for which a formula is calculated based on the value combinations of the category columns (here “Amount” and “Price”) are called data columns. The individual values that exists within a category column are called members.

In general, the behavior of a data pilot is specified by fields, where each field has a name and a so called orientation. The category columns are specified by fields with the orientation “row” or “column” and the data columns are specified by fields that have the orientation “data”. In the above example, “Article” is a field with the orientation column, while “Country” and “City” are fields with the orientation row. “Amount” and “Price” are fields with “data” orientation.

A third kind of fields are data layout fields. Data layout fields are not connected to a column in the source table, but have the only the purpose to change the layout of the data pilot table. In the example, “Data” is a data layout field.

The order in which fields are specified is of relevance. It specified the order in which the data of category columns is grouped and results are displayed. The data pilot table below displays how the data pilot table changes if for instance the data layout field is specified before the category column fields.

Example: A data pilot with a modified layout

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Article |  |  |  |
| Data | Country | City | Main Unit | Monitor | Printer | **Total** |
| Sum - Amount | France | Paris | 1 | 2 | 6 | **9** |
|  | Germany | Hamburg | 1 | 4 |  | **5** |
| Sum - Price | France | Paris | 12 | 14 | 29 | **55** |
|  | Germany | Hamburg | 12 | 25 |  | **37** |
| **Total sum - Amount** |  |  | **2** | **6** | **6** | **14** |
| **Total sum - Price** |  |  | **24** | **39** | **29** | **92** |

The attributes associated with the data pilot table element are:

* Data pilot table name
* Application data
* Grand total
* Ignore empty rows
* Identify categories
* Target range address
* Show Filter Button
* Drill Down On Double Click

<define name="table-data-pilot-table">

<element name="table:data-pilot-table">

<ref name="table-data-pilot-table-attlist"/>

<optional>

<choice>

<ref name="table-database-source-sql"/>

<ref name="table-database-source-table"/>

<ref name="table-database-source-query"/>

<ref name="table-source-service"/>

<ref name="table-source-cell-range"/>

</choice>

</optional>

<oneOrMore>

<ref name="table-data-pilot-field"/>

</oneOrMore>

</element>

</define>

#### Data Pilot Table Source

The source of the data pilot table is either stored in a database, that is, a database table itself, a SQL query or a named query, or it is a cell range located within the same document. It can also be provided by an external component in an implementation dependent way.

The source of the data pilot table is specified by one of the following elements that are contained in the <table:data-pilot-table> element:

* <table:database-source-sql> (see section 8.6.2)
* <table:database-source-table> (see section 8.6.3)
* <table:database-source-query> (see section 8.6.4)
* <table:source-cell-range> (see section 8.8.2)
* <table:source-service> (see section 8.8.3)

#### Data Pilot Table Name

The table:name attribute specifies the name of the data pilot table.

<define name="table-data-pilot-table-attlist" combine="interleave">

<attribute name="table:name">

<ref name="string"/>

</attribute>

</define>

#### Application Data

The table:application-data attribute specifies extra information about the data pilot table, which can be used by the application, for instance within macros. This data does not influence the behavior of the data pilot.

<define name="table-data-pilot-table-attlist" combine="interleave">

<optional>

<attribute name="table:application-data">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Grand Total

The table:grand-total attribute specifies whether a grand total column, row, or both should be displayed in addition to values calculated for each combination of values in the category columns. In the above example, grand totals are enabled. They are displayed in the row and column labeled “Total”.

<define name="table-data-pilot-table-attlist" combine="interleave">

<optional>

<attribute name="table:grand-total" a:defaultValue="both">

<choice>

<value>none</value>

<value>row</value>

<value>column</value>

<value>both</value>

</choice>

</attribute>

</optional>

</define>

#### Ignore Empty Rows

The table:ignore-empty-rows attribute specifies whether or not empty rows in the source range should be ignored.

<define name="table-data-pilot-table-attlist" combine="interleave">

<optional>

<attribute name="table:ignore-empty-rows" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Identify Categories

The table:identify-categories attribute specifies whether rows that do not contain a value in one of the category columns should use the value of the nearest ancestor row that has a value, or whether such rows should be moved into a group (or category) of its own. If the attribute's value is false, empty values form a category of its own.

<define name="table-data-pilot-table-attlist" combine="interleave">

<optional>

<attribute name="table:identify-categories" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Target Range Address

The table:target-range-address attribute specifies where the target range of the data pilot table output, that is, where the data pilot table is displayed. A differentiation between absolute and relative addresses is not possible, that is, the address is interpreted as an absolute address even if it contains dollar signs. The range address must contain a table name.

<define name="table-data-pilot-table-attlist" combine="interleave">

<attribute name="table:target-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</define>

#### Buttons

Within a data pilot table, some cells might be displayed as buttons to allow interactive operations on the table like changing the order of columns. The table:buttons attribute specifies all cells which should be displayed this way. Its value is a list of cell-addresses. A differentiation between absolute and relative addresses is not possible, that is, the addresses are interpreted as absolute addresses even if they contain dollar signs. All addresses must contain a table name.

In the examples above, button cells are displayed with a gray background.

<define name="table-data-pilot-table-attlist" combine="interleave">

<optional>

<attribute name="table:buttons">

<ref name="cellRangeAddressList"/>

</attribute>

</optional>

</define>

#### Show Filter Button

The table:show-filter-button attribute specifies whether a filter button is shown in the UI within the Data Pilot. A filter button displays a filter dialog if pushed.

<define name="table-data-pilot-table-attlist" combine="interleave">

<optional>

<attribute name="table:show-filter-button" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Drill Down On Double Click

The table:drill-down-on-double-click attribute specifies how the data pilot table reacts on a double click into the data pilot table. If the attribute's value is false, a double click on a member label or the empty area next to it starts the edit mode of the table cell, like for cells outside of the data pilot table. This can then be used to rename group fields or members. If the attribute's value is true, a double click on a member label or the empty area next to it shows or hides details for that member. A double click elsewhere in a data pilot table has no effect.

<define name="table-data-pilot-table-attlist" combine="interleave">

<optional>

<attribute name="table:drill-down-on-double-click"

a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Source Cell Range

If the source of a data pilot table is a cell range, the <table:source-cell-range> element contains information about the cell range and how the data pilot table gets the data from the range. Before the source data is processed by the data pilot data, a filter may be applied to it. This filter has to be specified by a <table:filter> child element.

<define name="table-source-cell-range">

<element name="table:source-cell-range">

<ref name="table-source-cell-range-attlist"/>

<optional>

<ref name="table-filter"/>

</optional>

</element>

</define>

The only attribute that may be associated with the source cell range element is:

* Cell range address

#### Cell Range Address

The table:cell-range-address attribute specifies the cell range containing the source data. The source cell range's address must be absolute. Therefore, the cell range address must contain a table name and dollar signs are ignored.

<define name="table-source-cell-range-attlist" combine="interleave">

<attribute name="table:cell-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</define>

### Source Service

The source of a data pilot table can be “service”, that is, it can be provided by an external component. The source service element <table:source-service> contains information about the service which is used to create the data pilot table.

<define name="table-source-service">

<element name="table:source-service">

<ref name="table-source-service-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with this element are:

* Service name
* Source name
* Object name
* Source user name
* Source password

#### Service Name

The table:name attribute specifies the name of the service. The value of this attribute is implementation specific.

<define name="table-source-service-attlist" combine="interleave">

<attribute name="table:name">

<ref name="string"/>

</attribute>

</define>

#### Source Name

The table:source-name attribute specifies a source name that is passed to the service implementation. Its value is application and service specific.

<define name="table-source-service-attlist" combine="interleave">

<attribute name="table:source-name">

<ref name="string"/>

</attribute>

</define>

#### Object Name

The table:object-name attribute specifies the name of the object in the source which contains the data and is passed to the service implementation. Its value is application and service specific.

<define name="table-source-service-attlist" combine="interleave">

<attribute name="table:object-name">

<ref name="string"/>

</attribute>

</define>

#### Source User Name

The table:user-name attribute specifies the user name required to access the source. It is passed to the service implementation. Its value is application and service specific.

<define name="table-source-service-attlist" combine="interleave">

<optional>

<attribute name="table:user-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Source Password

The table:password attribute specifies the password required to access the source. It is passed to the service implementation. Its value is application and service specific.

<define name="table-source-service-attlist" combine="interleave">

<optional>

<attribute name="table:password">

<ref name="string"/>

</attribute>

</optional>

</define>

### Data Pilot Field

A data pilot table's fields are specified by <table:data-pilot-field> elements.

<define name="table-data-pilot-field">

<element name="table:data-pilot-field">

<ref name="table-data-pilot-field-attlist"/>

<optional>

<ref name="table-data-pilot-level"/>

</optional>

<optional>

<ref name="table-data-pilot-field-reference"/>

</optional>

<optional>

<ref name="table-data-pilot-groups"/>

</optional>

</element>

</define>

The attributes that may be associated with the data pilot field element are:

* Source field name
* Orientation
* Is data layout field
* Function
* Used hierarchy

#### Source Field Name

For fields that specify category or data columns, the table:source-field-name attribute specifies the name or label of the column the field is connected to. If the source of the data pilot table is for instance a cell range, then the attribute's value has to be the column's label.

There can be multiple <table:data-pilot-field> elements with the same value for this attribute.

<define name="table-data-pilot-field-attlist" combine="interleave">

<attribute name="table:source-field-name">

<ref name="string"/>

</attribute>

</define>

#### Orientation

The table:orientation attribute specifies the orientation of the source field. If the value is data, then the field specifies a data column. If the value is row or column, then the field specifies a category column. The value hidden is used for fields that have a corresponding column in the data pilot's source, but are not visible within the data pilot table. The value page indicates that an automatic filter (i.e., one that allows to choose one of the values that are contained in the column) should be generated for the corresponding column. In this case, an additional field with row, column or data orientation has to exist for the column.

If the attribute value is page, the table:selected-page attribute can be used to specify which value is selected for the filter.

<define name="table-data-pilot-field-attlist" combine="interleave">

<choice>

<attribute name="table:orientation">

<choice>

<value>row</value>

<value>column</value>

<value>data</value>

<value>hidden</value>

</choice>

</attribute>

<group>

<attribute name="table:orientation">

<value>page</value>

</attribute>

<attribute name="table:selected-page">

<ref name="string"/>

</attribute>

</group>

</choice>

</define>

#### Is Data Layout Field

The table:is-data-layout-field attribute specifies whether a field is a data layout field (see section 8.8.1). Data layout fields usually don't have a name.

<define name="table-data-pilot-field-attlist" combine="interleave">

<optional>

<attribute name="table:is-data-layout-field" a:defaultValue="false">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Function

The table:function attribute specifies the function which is applied to the cell values of data columns. It is only evaluated if the value of the table:orientation attribute is data. Possible values for this attribute are: auto, average, count, countnums, max, min, product, stdev, stdevp, sum, var and varp. For category columns the attribute's value auto can be used that specifies that no function is applied at all.

<define name="table-data-pilot-field-attlist" combine="interleave">

<optional>

<attribute name="table:function">

<choice>

<value>auto</value>

<value>average</value>

<value>count</value>

<value>countnums</value>

<value>max</value>

<value>min</value>

<value>product</value>

<value>stdev</value>

<value>stdevp</value>

<value>sum</value>

<value>var</value>

<value>varp</value>

<ref name="string"/>

</choice>

</attribute>

</optional>

</define>

#### Used Hierarchy

If the data pilot source is provided by an external component or service, the data contained within category columns may not only grouped by its value, but it may be further divided into sub-groups or hierarchies. A date value for instance might be grouped by

* “year”, “month” and “day of month”, or
* “year”, “week” and “day of week”

If an external components supports hierarchies, it has to assign unique numbers to it. These numbers can be used in the table:used-hierarchy attribute to select the hierarchy that should be applied to the source field. The value means that no hierarchy should be applied at all.

<define name="table-data-pilot-field-attlist" combine="interleave">

<optional>

<attribute name="table:used-hierarchy" a:defaultValue="-1">

<ref name="integer"/>

</attribute>

</optional>

</define>

### Data Pilot Level

The data pilot level element <table:data-pilot-level> contains additional information about a data pilot field.

<define name="table-data-pilot-level">

<element name="table:data-pilot-level">

<ref name="table-data-pilot-level-attlist"/>

<optional>

<ref name="table-data-pilot-subtotals"/>

</optional>

<optional>

<ref name="table-data-pilot-members"/>

</optional>

<optional>

<ref name="table-data-pilot-display-info"/>

</optional>

<optional>

<ref name="table-data-pilot-sort-info"/>

</optional>

<optional>

<ref name="table-data-pilot-layout-info"/>

</optional>

</element>

</define>

The attribute that may be associated associate with the data pilot level element is:

* Show empty

#### Show Empty

The table:show-empty attribute specifies whether or not fields that don't have any members should be displayed. If this attribute is not present, the application might or might not display such fields.

<define name="table-data-pilot-level-attlist" combine="interleave">

<optional>

<attribute name="table:show-empty">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Data Pilot Subtotals

The data pilot subtotals element <table:data-pilot-subtotals> contains information about the provisional results that are displayed for every member of a field and the function used to calculate the result. Several provisional results can be calculated simultaneously. If the element is not present, the application might or might not display provisional results.

<define name="table-data-pilot-subtotals">

<element name="table:data-pilot-subtotals">

<zeroOrMore>

<ref name="table-data-pilot-subtotal"/>

</zeroOrMore>

</element>

</define>

### Data Pilot Subtotal

The data pilot subtotal element <table:data-pilot-subtotal> contains information about a single provision result calculation.

<define name="table-data-pilot-subtotal">

<element name="table:data-pilot-subtotal">

<ref name="table-data-pilot-subtotal-attlist"/>

<empty/>

</element>

</define>

The attribute that may be associated associate with the data pilot subtotal element is:

* Function

#### Function

The table:function attribute specifies the function used for the subtotal. Possible functions are auto, average, count, countnums, max, min, product, stdev, stdevp, sum, var and varp.

<define name="table-data-pilot-subtotal-attlist" combine="interleave">

<attribute name="table:function">

<choice>

<value>auto</value>

<value>average</value>

<value>count</value>

<value>countnums</value>

<value>max</value>

<value>min</value>

<value>product</value>

<value>stdev</value>

<value>stdevp</value>

<value>sum</value>

<value>var</value>

<value>varp</value>

<ref name="string"/>

</choice>

</attribute>

</define>

### Data Pilot Members

For category columns, it can be controlled whether certain members themselves or the information displayed for a certain member actually is displayed or not. The <table:data-pilot-members> element contains such information.

<define name="table-data-pilot-members">

<element name="table:data-pilot-members">

<zeroOrMore>

<ref name="table-data-pilot-member"/>

</zeroOrMore>

</element>

</define>

### Data Pilot Member

The data pilot member element <table:data-pilot-member> specifies which information is displayed for a certain member.

<define name="table-data-pilot-member">

<element name="table:data-pilot-member">

<ref name="table-data-pilot-member-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the data pilot member element are:

* Member name
* Display
* Show details

#### Member Name

The table:name attribute specifies the value for which display information is specified.

<define name="table-data-pilot-member-attlist" combine="interleave">

<attribute name="table:name">

<ref name="string"/>

</attribute>

</define>

#### Display

The table:display attribute specifies whether or not a data pilot member is visible at all. If this attribute is not present, the application might or might not display the member.

<define name="table-data-pilot-member-attlist" combine="interleave">

<optional>

<attribute name="table:display">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Show Details

The attribute specifies whether additional fields are displayed for a member. This attribute changes the behavior of a data pilot only if there are several fields with the orientation row or column. If this is the case, and if the attribute's value is false for a field with row or column orientation that is not the last field with this orientation, then no members are displayed for all following fields with the same orientation. Instead of this, the data displayed for these fields will be summarized.

<define name="table-data-pilot-member-attlist" combine="interleave">

<optional>

<attribute name="table:show-details">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Data Pilot Display Info

The <table:data-pilot-display-info> element restricts the number rows that are displayed for a category field to a specific number of values of a data field.

<define name="table-data-pilot-display-info">

<element name="table:data-pilot-display-info">

<ref name="table-data-pilot-display-info-attlist"/>

<empty/>

</element>

</define>

#### Enabled

The table:enabled attribute specifies whether the <table:data-pilot-display-info> element is evaluated or not.

<define name="table-data-pilot-display-info-attlist" combine="interleave">

<attribute name="table:enabled">

<ref name="boolean"/>

</attribute>

</define>

#### Data Field

The table:data-field attribute specifies the data field whose values are taken into account.

<define name="table-data-pilot-display-info-attlist" combine="interleave">

<attribute name="table:data-field">

<ref name="string"/>

</attribute>

</define>

#### Member Count

The table:member-count attribute specifies how many values from the top or from the bottom of data field's column are shown.

<define name="table-data-pilot-display-info-attlist" combine="interleave">

<attribute name="table:member-count">

<ref name="nonNegativeInteger"/>

</attribute>

</define>

#### Display Member Mode

The table:display-member-mode attribute specifies whether the values specified by table:member-count should be taken from the top or from the bottom of a data field's column.

<define name="table-data-pilot-display-info-attlist" combine="interleave">

<attribute name="table:display-member-mode">

<choice>

<value>from-top</value>

<value>from-bottom</value>

</choice>

</attribute>

</define>

### Data Pilot Sort Info

The <table:data-pilot-sort-info> element specifies how the members of a category field are sorted.

<define name="table-data-pilot-sort-info">

<element name="table:data-pilot-sort-info">

<ref name="table-data-pilot-sort-info-attlist"/>

<empty/>

</element>

</define>

#### Sort Mode

The table:sort-mode attribute describes how to sort the members of a single data pilot field. If the mode is data, then the members of the current category field a sorted according to their values in the data field specified by the table:data-field attribute. If the mode is manual, the user can sort the members in the field manually. If the mode is name, the members in the field are sorted by their name.

<define name="table-data-pilot-sort-info-attlist" combine="interleave">

<choice>

<group>

<attribute name="table:sort-mode">

<value>data</value>

</attribute>

<attribute name="table:data-field">

<ref name="string"/>

</attribute>

</group>

<attribute name="table:sort-mode">

<choice>

<value>none</value>

<value>manual</value>

<value>name</value>

</choice>

</attribute>

</choice>

</define>

#### Sort Order

The table:sort-order attribute specifies whether to sort the members ascending or descending.

<define name="table-data-pilot-sort-info-attlist" combine="interleave">

<attribute name="table:order">

<choice>

<value>ascending</value>

<value>descending</value>

</choice>

</attribute>

</define>

### Data Pilot Layout Info

The <table:data-pilot-layout-info> element describes how to layout the field.

<define name="table-data-pilot-layout-info">

<element name="table:data-pilot-layout-info">

<ref name="table-data-pilot-layout-info-attlist"/>

<empty/>

</element>

</define>

#### Layout Mode

The table:layout-mode attribute describes how to layout the field. It may have the following values:

* tabular-layout: Tabular layout mode is the layout, where each member's name is on the same row as the first member from the following field. Subtotals are always shown below a member's data in this mode.
* outline-subtotals-top: In outline layout mode, the members from the following field start in the row below a member's name, like in traditional database reports. Subtotals are shown at the top (in the same row as the member's name). When the subtotals take up more than one row (manually selected, or because there are several data fields), they are always shown below the member's data, regardless of the setting.
* outline-subtotals-bottom: Like outline-subtotals-top, except that subtotals are shown at the bottom (below the member's data, as in tabular layout mode).

<define name="table-data-pilot-layout-info-attlist" combine="interleave">

<attribute name="table:layout-mode">

<choice>

<value>tabular-layout</value>

<value>outline-subtotals-top</value>

<value>outline-subtotals-bottom</value>

</choice>

</attribute>

</define>

#### Add empty lines

If the attribute table:add-empty-lines has the value true, an empty row is inserted in the data pilot table after the data (including the subtotals) for each member of the field.

<define name="table-data-pilot-layout-info-attlist" combine="interleave">

<attribute name="table:add-empty-lines">

<ref name="boolean"/>

</attribute>

</define>

### Data Pilot Field Reference

The <table:data-pilot-field-reference> element describes data which can be used to modify the displayed values of data fields.

<define name="table-data-pilot-field-reference">

<element name="table:data-pilot-field-reference">

<ref name="table-data-pilot-field-reference-attlist"/>

</element>

</define>

#### Reference Field

The table:field-name attribute references a category field whose members influence the displayed values of the data field the <table:data-pilot-field-reference> is part of.

<define name="table-data-pilot-field-reference-attlist" combine="interleave">

<attribute name="table:field-name">

<ref name="string"/>

</attribute>

</define>

#### Reference Member Type

The table:member-type attribute specifies the member of the referenced category field, whose value within the current data field has to be taken into account. If its value is next (previous) then the value of the data field for the next (previous) visible member of the referenced category field will be taken into account. If its value is named, then the table:member-name specifies the member whose value within the data field is taken into account.

For previous and next, empty members are skipped.

<define name="table-data-pilot-field-reference-attlist" combine="interleave">

<choice>

<group>

<attribute name="table:member-type">

<value>named</value>

</attribute>

<attribute name="table:member-name">

<ref name="string"/>

</attribute>

</group>

<attribute name="table:member-type">

<choice>

<value>previous</value>

<value>next</value>

</choice>

</attribute>

</choice>

</define>

#### Reference Type

The table:type attribute specifies the how the referenced category field influences the displayed values of the data field. It may have one of the following values:

* none: This value means that the results in the data fields are displayed unmodified.
* member-difference: From each result, the value calculated for the category field member specified by the table:member-type and table:member-name attributes is subtracted.
* member-percentage: Each result is divided by the value calculated for the category field member specified by the table:member-type and table:member-name attributes. Division by zero results in an error. Empty results are shown as “0”. If the table:member-type attribute has the value previous, “1” is displayed as first value. If the table:member-type attribute has the value next, “1” is displayed as last value.
* member-percentage-difference: From each result, the value calculated for the category field member specified by the table:member-type and table:member-name attributes is subtracted, and the result is divided by this value again. Division by zero results in an error. Otherwise, the rules for member-difference apply.
* running-total: Each result is added to the sum of the results for preceding members in the referenced category field, in the reference field's sort order, and the total sum is shown.
* row-percentage: Each result is divided by the total result for its row in the data pilot table. If there are several data fields, the total for the result's data field is used. If there are subtotals with manually selected summary functions, the total is calculated with the data field's summary function. Division by zero results in an error.
* column-percentage: Same as row-percentage, but the total for the result's column is used.
* total-percentage: Same as row-percentage, but the grand total for the result's data field is used.
* index: The row and column totals and the grand total are calculated as described above, and then are used to calculate the following expression: (original result \* grand total ) / ( row total \* column total ).Division by zero results in an error.

<define name="table-data-pilot-field-reference-attlist" combine="interleave">

<attribute name="table:type">

<choice>

<value>none</value>

<value>member-difference</value>

<value>member-percentage</value>

<value>member-percentage-difference</value>

<value>running-total</value>

<value>row-percentage</value>

<value>column-percentage</value>

<value>total-percentage</value>

<value>index</value>

</choice>

</attribute>

</define>

### Data Pilot Groups

The <table:data-pilot-groups> element specifies that a data pilot field is a group field. A group field allows grouping of other fields. For example, if a data pilot table contains a column field with the name “city” which has the members “Berlin”, “Munich”, “Frankfurt”, “Hamburg”, “London”, “Manchester”, “Hastings” and “Liverpool”, then one may want to group the cities by their countries. To do so, a group field with name “city2” could be added to the data pilot table, that contains two groups called “England” and “Germany”. Each group here contains a list of the names of its members. In this example, the group “England” would contain “London”, “Manchester”, “Hastings” and “Liverpool”. The group “Germany” would contain “Berlin”, “Munich”, “Frankfurt” and “Hamburg”.

Grouping may also take place for numeric or date values.

<define name="table-data-pilot-groups">

<element name="table:data-pilot-groups">

<ref name="table-data-pilot-groups-attlist"/>

<oneOrMore>

<ref name="table-data-pilot-group"/>

</oneOrMore>

</element>

</define>

#### Source Field Name

The table:source-field-name attribute references the field containing the data that is grouped, if this data differs from the data that is referenced by the field itself.

<define name="table-data-pilot-groups-attlist" combine="interleave">

<attribute name="table:source-field-name">

<ref name="string"/>

</attribute>

</define>

#### Start

If numeric or date values are grouped, the table:date-start and table:start attributes specify the start value for the grouping. All values that are lower than the start value are contained in a single group, while values that are equal to or higher than the start value are grouped as specified by the table:grouped-by and table:step attributes.

If the attribute's value is auto, the lowest value of the field is taken as start value.

<define name="table-data-pilot-groups-attlist" combine="interleave">

<choice>

<attribute name="table:date-start">

<choice>

<ref name="dateOrDateTime"/>

<value>auto</value>

</choice>

</attribute>

<attribute name="table:start">

<choice>

<ref name="double"/>

<value>auto</value>

</choice>

</attribute>

</choice>

</define>

#### End

If numeric or date values are grouped, the table:date-end and table:end attributes specify the end value for the grouping. All values that are higher than the end value are contained in a single group, while values that are equal to or lower than the end value are grouped as specified by the table:grouped-by and table:step attributes.

If the attribute's value is auto, the highest value of the field is taken as end value.

<define name="table-data-pilot-groups-attlist" combine="interleave">

<choice>

<attribute name="table:date-end">

<choice>

<ref name="dateOrDateTime"/>

<value>auto</value>

</choice>

</attribute>

<attribute name="table:end">

<choice>

<ref name="double"/>

<value>auto</value>

</choice>

</attribute>

</choice>

</define>

#### Step

The table:step attribute specifies the grouping of numeric values, by specifying the distance between the groups. For example, if the table:start attribute for the grouping has the value 5, and the table:step attribute has the value 2, all values that are equal to or higher than 5, but also lower than 7 are in one group. All values that are equal to or higher than 7, but also lower than 9 are in next group, and so on, until the end value is reached.

<define name="table-data-pilot-groups-attlist" combine="interleave">

<attribute name="table:step">

<ref name="double"/>

</attribute>

</define>

#### Grouped By

The table:grouped-by attribute specifies the grouping of the date values. Date values can be grouped by seconds, minutes, hours, days, months, quarters or years. It date values are for instance grouped by minutes, all dates or times that are within the same minute are within one group. That, is if the dates 2004-08-27T12:34:46, 2004-08-27T12:34:56 and 2004-08-27T12:35:46 are given, the first two would be within one group, while the last date would be a group of its own.

<define name="table-data-pilot-groups-attlist" combine="interleave">

<attribute name="table:grouped-by">

<choice>

<value>seconds</value>

<value>minutes</value>

<value>hours</value>

<value>days</value>

<value>months</value>

<value>quarters</value>

<value>years</value>

</choice>

</attribute>

</define>

### Data Pilot Group

If grouping takes place by specifying the member names, then the <table:data-pilot-group> element specifies the member names of a single group.

<define name="table-data-pilot-group">

<element name="table:data-pilot-group">

<ref name="table-data-pilot-group-attlist"/>

<oneOrMore>

<ref name="table-data-pilot-group-member"/>

</oneOrMore>

</element>

</define>

#### Name

The table:name attribute specifies the name of the group.

<define name="table-data-pilot-group-attlist" combine="interleave">

<attribute name="table:name">

<ref name="string"/>

</attribute>

</define>

### Data Pilot Group Member

The <table:data-pilot-group-member> element specifies the name of a single group member.

<define name="table-data-pilot-group-member">

<element name="table:data-pilot-group-member">

<ref name="table-data-pilot-group-member-attlist"/>

</element>

</define>

#### Name

The table:name attribute specifies the name of the member.

<define name="table-data-pilot-group-member-attlist" combine="interleave">

<attribute name="table:name">

<ref name="string"/>

</attribute>

</define>

## Consolidation

A consolidation combines data from several independent table ranges. A new table range is calculated by applying a mathematical function to all cells in the source table ranges that have the same relative address within these ranges. A consolidation is defined by the <table:consolidation> element.

<define name="table-consolidation">

<element name="table:consolidation">

<ref name="table-consolidation-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with this element are:

* Function
* Source cell range addresses
* Target cell address
* Use label
* Link to source data

#### Function

The table:function attribute contains the function which is used to consolidate the data. Possible functions are auto, average, count, countnums, max, min, product, stdev, stdevp, sum, var and varp.

<define name="table-consolidation-attlist" combine="interleave">

<attribute name="table:function">

<choice>

<value>auto</value>

<value>average</value>

<value>count</value>

<value>countnums</value>

<value>max</value>

<value>min</value>

<value>product</value>

<value>stdev</value>

<value>stdevp</value>

<value>sum</value>

<value>var</value>

<value>varp</value>

<ref name="string"/>

</choice>

</attribute>

</define>

#### Source Cell Range Addresses

The table:source-cell-range-addresses attribute contains a list of cell range addresses that specify the source cell ranges.

<define name="table-consolidation-attlist" combine="interleave">

<attribute name="table:source-cell-range-addresses">

<ref name="cellRangeAddressList"/>

</attribute>

</define>

#### Target Cell Address

The table:target-cell-address attribute contains the target cell address.

<define name="table-consolidation-attlist" combine="interleave">

<attribute name="table:target-cell-address">

<ref name="cellAddress"/>

</attribute>

</define>

#### Use Label

The table:use-label attribute specifies whether or not labels should be used by the consolidation for rows, columns or both. Possible values are none, column, row and both. If labels are used for rows or columns, the mathematical functions is applied to cells with equally labeled rows or columns rather than to cells with the same relative cell address.

<define name="table-consolidation-attlist" combine="interleave">

<optional>

<attribute name="table:use-labels" a:defaultValue="none">

<choice>

<value>none</value>

<value>row</value>

<value>column</value>

<value>both</value>

</choice>

</attribute>

</optional>

</define>

#### Link to Source Data

The table:link-to-source-data attribute specifies whether the data in the consolidation table range should be linked to the source data, so that it is automatically updated if any changes are made to the source data.

<define name="table-consolidation-attlist" combine="interleave">

<optional>

<attribute name="table:link-to-source-data" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## DDE Links

The <table:dde-links> container element stores all DDE links within a spreadsheet document. Every link contains the DDE Source and the data of the last connection. See section 12.6.3 for details.

See section 12.6 for the use of DDE connections.

<define name="table-dde-links">

<element name="table:dde-links">

<oneOrMore>

<ref name="table-dde-link"/>

</oneOrMore>

</element>

</define>

## Change Tracking in Spreadsheets

Within spreadsheet documents, changes to tables can be tracked. This section describes how this change tracking information is represented.

Change tracking of tables is not supported for text documents.

### Tracked Changes

All changes that have been applied to a spreadsheet document are stored in a list. The list contains an element for each change made to the document. To track the changes to a spreadsheet document, the <table:tracked-changes> element must be present.

<define name="table-tracked-changes">

<element name="table:tracked-changes">

<ref name="table-tracked-changes-attlist"/>

<zeroOrMore>

<choice>

<ref name="table-cell-content-change"/>

<ref name="table-insertion"/>

<ref name="table-deletion"/>

<ref name="table-movement"/>

</choice>

</zeroOrMore>

</element>

</define>

#### Track Changes

The table:track-changes attribute specifies whether or not the change tracking is enabled.

<define name="table-tracked-changes-attlist" combine="interleave">

<optional>

<attribute name="table:track-changes" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Insertion

The <table:insertion> element contains the information that is required to identify any insertion of content. This content can be one or more rows, one or more columns, or a table.

<define name="table-insertion">

<element name="table:insertion">

<ref name="table-insertion-attlist"/>

<ref name="common-table-change-attlist"/>

<ref name="office-change-info"/>

<optional>

<ref name="table-dependencies"/>

</optional>

<optional>

<ref name="table-deletions"/>

</optional>

</element>

</define>

The attributes that may be associated with this element are:

* ID (see section 8.11.18)
* Acceptance State (see section 8.11.18)
* Rejecting Change ID (see section 8.11.18)
* Type
* Position
* Count
* Table

#### Type

The table:type attribute specifies the type of the insertion. It can be row, column or table.

<define name="table-insertion-attlist" combine="interleave">

<attribute name="table:type">

<choice>

<value>row</value>

<value>column</value>

<value>table</value>

</choice>

</attribute>

</define>

#### Position

The table:position attribute specifies the position where the insertion was made in the table. Depending on the insertion type, It is either the number of a row, a column or a table.

<define name="table-insertion-attlist" combine="interleave">

<attribute name="table:position">

<ref name="integer"/>

</attribute>

</define>

#### Count

The table:count attribute specifies the count of inserted rows, columns or tables.

<define name="table-insertion-attlist" combine="interleave">

<optional>

<attribute name="table:count" a:defaultValue="1">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

#### Table

The table:table attribute specifies the number of the table where the insertion took place. This attribute only exists for column and row insertions.

<define name="table-insertion-attlist" combine="interleave">

<optional>

<attribute name="table:table">

<ref name="integer"/>

</attribute>

</optional>

</define>

Example: Insertion of text in a cell

<table:tracked-changes>

<table:insertion table:id="c001" table:acceptance-state="pending"

table:type="column" table:position="5">

<office:change-info>

<dc:creator>Sascha Ballach</dc:creator>

<dc:date>1999-55-18T12:56:04</dc:date>

</office:change-info>

</table:insertion>

</table:tracked-changes>

### Dependencies

The <table:dependencies> element contains the information on which other tracked changes a tracked change depends. Every element of the tracked-changes can contain a <table:dependencies> element.

<define name="table-dependencies">

<element name="table:dependencies">

<oneOrMore>

<ref name="table-dependency"/>

</oneOrMore>

</element>

</define>

### Dependence

The <table:dependency> element contains the information about one change action on which the parent element depends. The change action on which the current depends is referenced by an id.

<define name="table-dependency">

<element name="table:dependency">

<attribute name="table:id">

<ref name="string"/>

</attribute>

<empty/>

</element>

</define>

### Deletions

The <table:deletions> element contains all deletions which are performed while tracking a single change to a table.

<define name="table-deletions">

<element name="table:deletions">

<oneOrMore>

<choice>

<ref name="table-cell-content-deletion"/>

<ref name="table-change-deletion"/>

</choice>

</oneOrMore>

</element>

</define>

### Cell Content Deletion

The <table:cell-content-deletion> element specifies that a cell content has been deleted. It contains the address of the effected cell and its former content. If a text:id attribute is present, it specifies the id of a previously tracked change for the cell that gets deleted by the current change.

<define name="table-cell-content-deletion">

<element name="table:cell-content-deletion">

<optional>

<attribute name="table:id">

<ref name="string"/>

</attribute>

</optional>

<optional>

<ref name="table-cell-address"/>

</optional>

<optional>

<ref name="table-change-track-table-cell"/>

</optional>

</element>

</define>

### Change Deletion

The <table:change-deletion> element specified the id of a previously tracked change that gets deleted by the current change.

<define name="table-change-deletion">

<element name="table:change-deletion">

<optional>

<attribute name="table:id">

<ref name="string"/>

</attribute>

</optional>

<empty/>

</element>

</define>

### Deletion

A <table:deletion> element contains content that was deleted while change tracking was enabled. The content of a cell that was deleted is either contained in the <table:dependencies>, or in the <table:deletions> element.

<define name="table-deletion">

<element name="table:deletion">

<ref name="table-deletion-attlist"/>

<ref name="common-table-change-attlist"/>

<ref name="office-change-info"/>

<optional>

<ref name="table-dependencies"/>

</optional>

<optional>

<ref name="table-deletions"/>

</optional>

<optional>

<ref name="table-cut-offs"/>

</optional>

</element>

</define>

The attributes that may be associated with this element are:

* ID (see section 8.11.18)
* Acceptance State (see section 8.11.18)
* Rejecting Change ID (see section 8.11.18)
* Type
* Position
* Table
* Multi Deletion Spanned

#### Type

The table:type attribute specifies the type of the deletion. It can be row, column or table.

<define name="table-deletion-attlist" combine="interleave">

<attribute name="table:type">

<choice>

<value>row</value>

<value>column</value>

<value>table</value>

</choice>

</attribute>

</define>

#### Position

The table:position attribute specifies the position where the deletion was made in the table. Depending on the deletion type, It is either the number of a row, a column or a table.

<define name="table-deletion-attlist" combine="interleave">

<attribute name="table:position">

<ref name="integer"/>

</attribute>

</define>

#### Table

The table:table attribute specifies the number of the table where the deletion took place. This attribute only exists for column and row deletions.

<define name="table-deletion-attlist" combine="interleave">

<optional>

<attribute name="table:table">

<ref name="integer"/>

</attribute>

</optional>

</define>

#### Multi Deletion Spanned

If multiple columns or rows were deleted simultaneously, each deleted row or column gets its own <table:deletion> element. The element of the first deleted row or column in this case has to carry a table:multi-deletion-spanned attribute that specifies the total number of deleted rows or columns.

<define name="table-deletion-attlist" combine="interleave">

<optional>

<attribute name="table:multi-deletion-spanned">

<ref name="integer"/>

</attribute>

</optional>

</define>

### Cut Offs

A <table:cut-offs> element contains information about previously tracked insertions or movements where parts of the new content created by this operation now gets deleted. An example for this might be a cell range that has previously been moved and that now overlaps with a row that gets deleted.

<define name="table-cut-offs">

<element name="table:cut-offs">

<choice>

<oneOrMore>

<ref name="table-movement-cut-off"/>

</oneOrMore>

<group>

<ref name="table-insertion-cut-off"/>

<zeroOrMore>

<ref name="table-movement-cut-off"/>

</zeroOrMore>

</group>

</choice>

</element>

</define>

### Insertion Cut Off

The <table:insertion-cut-off> element contains the information where a insertion was deleted and which.

<define name="table-insertion-cut-off">

<element name="table:insertion-cut-off">

<ref name="table-insertion-cut-off-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with this element are:

* ID (see section 8.11.18)
* position

#### Id

The table:id attribute contains the id of the insertion where parts of now get deleted.

<define name="table-insertion-cut-off-attlist" combine="interleave">

<attribute name="table:id">

<ref name="string"/>

</attribute>

</define>

#### Position

The table:position attribute specifies the number of the row or column within the insertion that gets deleted.

<define name="table-insertion-cut-off-attlist" combine="interleave">

<attribute name="table:position">

<ref name="integer"/>

</attribute>

</define>

### Movement Cut Off

The <table:movement-cut-off> element contains the information where a movement was deleted and which.

<define name="table-movement-cut-off">

<element name="table:movement-cut-off">

<ref name="table-movement-cut-off-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with this element are:

* ID (see section 8.11.18)
* start position, end position, position

#### Start Position, End Position, Position

The table:start-position, table:end-position and table:position attributes specify the position within the movement that gets deleted. If a single row or column gets deleted, the table:position attribute contains its number. If multiple rows or columns get deleted, the table:start-position and table:end-position attributes contain the number of the first (inclusive) and last (exclusive) deleted rows or columns.

<define name="table-movement-cut-off-attlist" combine="interleave">

<choice>

<attribute name="table:position">

<ref name="integer"/>

</attribute>

<group>

<attribute name="table:start-position">

<ref name="integer"/>

</attribute>

<attribute name="table:end-position">

<ref name="integer"/>

</attribute>

</group>

</choice>

</define>

Example: Deletion of a column which do not contain content

<table:tracked-changes>

<table:deletion table:id="c002" table:acceptance-state="pending"

table:type="column" table:position="9">

<office:change-info>

<dc:creator>Sascha Ballach</dc:creator>

<dc:date>1999-05-18T12:56:04</dc:creator>

</office:change-info>

</table:deletion>

</table:tracked-changes>

### Movement

A <table:movement> element contains the information that is required to identify any movement of content. This content can be a cell content or a cell range content.

<define name="table-movement">

<element name="table:movement">

<ref name="common-table-change-attlist"/>

<ref name="table-source-range-address"/>

<ref name="table-target-range-address"/>

<ref name="office-change-info"/>

<optional>

<ref name="table-dependencies"/>

</optional>

<optional>

<ref name="table-deletions"/>

</optional>

</element>

</define>

The attributes that may be associated with this element are:

* ID (see section 8.11.18)
* Acceptance State (see section 8.11.18)
* Rejecting Change ID (see section 8.11.18)

### Target Range Address, Source Range Address

The <table:source-range-address> and <table:target-range-address> specify the source and target cell address or cell range address of a movement.

<define name="table-source-range-address">

<element name="table:source-range-address">

<ref name="common-table-range-attlist"/>

<empty/>

</element>

</define>

<define name="table-target-range-address">

<element name="table:target-range-address">

<ref name="common-table-range-attlist"/>

<empty/>

</element>

</define>

<define name="common-table-range-attlist" combine="interleave">

<choice>

<group>

<ref name="common-table-cell-address-attlist"/>

</group>

<group>

<ref name="common-table-cell-range-address-attlist"/>

</group>

</choice>

</define>

The attributes that may be associated with these elements are either

* Column, Row, and Table, or
* Start column, End column, Start row, End row, Start table, and End table

#### Column, Row, and Table

If the range address is a cell address then the three attributes table:column, table:row and  
table:table specify the column, row and table number of the cell.

<define name="common-table-cell-address-attlist" combine="interleave">

<attribute name="table:column">

<ref name="integer"/>

</attribute>

<attribute name="table:row">

<ref name="integer"/>

</attribute>

<attribute name="table:table">

<ref name="integer"/>

</attribute>

</define>

#### Start Column, End Column, Start Row, End Row, Start Table, and End Table

If the range address is a cell range address instead of a cell address, the attributes table:start-column, table:end-column, table:start-row, table:end-row, table:start-table and table:end-table specify the start and end columns, rows and tables of the range. Start and end numbers both are inclusive.

<define name="common-table-cell-range-address-attlist" combine="interleave">

<attribute name="table:start-column">

<ref name="integer"/>

</attribute>

<attribute name="table:start-row">

<ref name="integer"/>

</attribute>

<attribute name="table:start-table">

<ref name="integer"/>

</attribute>

<attribute name="table:end-column">

<ref name="integer"/>

</attribute>

<attribute name="table:end-row">

<ref name="integer"/>

</attribute>

<attribute name="table:end-table">

<ref name="integer"/>

</attribute>

</define>

Example: Moving a cell

<table:tracked-changes>

<table:movement table:id="ct1">

<table:source-range-address table:column="0" table:row="0"

table:table="0"/>

<table:target-range-address table:column="1" table:row="1"

table:table="0"/>

<office:change-info>

<dc:creator>Michael Brauer</dc:creator>

<dc:date>2003-12-29T11:46:13,21"</dc:date>

</office:change-info>

</table:movement>

</table:tracked-changes>

### Change Track Cell

The <table:change-track-table-cell> element contains all information of a table cell which are needed inside the change tracking elements. The element is very similar to a <table:table-cell> element, but contains some additional information.

<define name="table-change-track-table-cell" combine="interleave">

<element name="table:change-track-table-cell">

<ref name="table-change-track-table-cell-attlist"/>

<zeroOrMore>

<ref name="text-p"/>

</zeroOrMore>

</element>

</define>

#### Cell Address

If the cell is a formula cell, the table:cell-address attribute is required and specifies the original address of the cell used in calculations.

<define name="table-change-track-table-cell-attlist" combine="interleave">

<optional>

<attribute name="table:cell-address">

<ref name="cellAddress"/>

</attribute>

</optional>

</define>

#### Matrix Covered

If the cell is a matrix cell and not the base of the matrix the, table:matrix-covered attribute is necessary and its value has to be true to indicate that the cell is contained in a matrix.

<define name="table-change-track-table-cell-attlist" combine="interleave">

<optional>

<attribute name="table:matrix-covered" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Formulas and Values

The change track table cells additionally supports the attributes table:formula, table:number-matrix-rows-spanned, table:number-matrix-columns-spanned, office:value-type, office:value, office:date-value, office:time-value and office:string-value as described in section 8.1.3.

<define name="table-change-track-table-cell-attlist" combine="interleave">

<optional>

<attribute name="table:formula">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="table:number-matrix-columns-spanned">

<ref name="positiveInteger"/>

</attribute>

</optional>

<optional>

<attribute name="table:number-matrix-rows-spanned">

<ref name="positiveInteger"/>

</attribute>

</optional>

<optional>

<ref name="common-value-and-type-attlist"/>

</optional>

</define>

### Cell Content Change

A <table:cell-content-change> element contains the information that is required to identify changes of the cell content.

<define name="table-cell-content-change">

<element name="table:cell-content-change">

<ref name="common-table-change-attlist"/>

<ref name="table-cell-address"/>

<ref name="office-change-info"/>

<optional>

<ref name="table-dependencies"/>

</optional>

<optional>

<ref name="table-deletions"/>

</optional>

<ref name="table-previous"/>

</element>

</define>

The attributes that may be associated with this element are:

* ID (see section 8.11.18)
* Acceptance State (see section 8.11.18)
* Rejecting Change ID (see section 8.11.18)

### Cell Address

The <table:cell-address> element contains the address of cell that is changed. Unlike other cell addresses, the address consists of the row, column and table number of the cell. This allows specifying addresses that are outside the valid cell address range, for instance have a negative column number.

<define name="table-cell-address">

<element name="table:cell-address">

<ref name="common-table-cell-address-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with this element are:

* Column, Row, and Table number (see section 8.11.13)

### Previous

The table:previous element contains the previous cell content which is overwritten by the current change. If a text:id attribute is present, it specifies the id of a previously tracked change for the cell that gets changed again by the current change.

<define name="table-previous">

<element name="table:previous">

<optional>

<attribute name="table:id">

<ref name="string"/>

</attribute>

</optional>

<ref name="table-change-track-table-cell"/>

</element>

</define>

### Common Change Tracking Attributes

#### Id

The table:id attribute specifies the id of the tracked change.

<define name="common-table-change-attlist" combine="interleave">

<attribute name="table:id">

<ref name="string"/>

</attribute>

</define>

#### Acceptance state

The table:acceptance-state attribute specifies whether the tracked change has been accepted or rejected already, or whether an acceptance or rejection is still pending.

<define name="common-table-change-attlist" combine="interleave">

<optional>

<attribute name="table:acceptance-state" a:defaultValue="pending">

<choice>

<value>accepted</value>

<value>rejected</value>

<value>pending</value>

</choice>

</attribute>

</optional>

</define>

#### Rejecting Change Id

If the table:rejecting-change-id attribute is present, then the current change has been made to the table to implement the rejection of another previously tracked change. The attribute's value is the id of this previously tracked change that has been rejected.

<define name="common-table-change-attlist" combine="interleave">

<optional>

<attribute name="table:rejecting-change-id">

<ref name="string"/>

</attribute>

</optional>

</define>

1. Graphic Content

This chapter provides the specification for the core elements of graphic applications like drawing or presentation applications, and for graphical objects contained in non-graphical applications, like word processor or spreadsheet applications.

## Enhanced Page Features for Graphical Applications

### Handout Master

For applications that support printing handout pages, this element is a template for automatically generating the handout pages. The element <style:handout-master> can contain any types of shapes. The most useful shape is the <draw:page-thumbnail>, which is replaced by actual pages from the document. The <style:handout-master> element is contained in the <office:master-styles> element. The <office:master-styles> must not contain more than one <style:handout-master> element.

<define name="style-handout-master">

<element name="style:handout-master">

<ref name="common-presentation-header-footer-attlist"/>

<ref name="style-handout-master-attlist"/>

<zeroOrMore>

<ref name="shape"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <style:handout-master> element are:

* Presentation Page Layout (placeholder objects)
* Page Layout (page size, margins etc.)
* Page Style
* Header Declaration
* Footer Declaration
* Date and Time Declaration

#### Presentation Page Layout

The attribute presentation:presentation-page-layout-name links to a <style:presentation-page-layout> element. See section 14.15 for information on the presentation page layout element. This attribute is optional.

<define name="style-handout-master-attlist" combine="interleave">

<optional>

<attribute name="presentation:presentation-page-layout-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Page Layout

The style:page-layout-name attribute specifies a page layout which contains the sizes, border and orientation of the handout master page. See section 14.3 for details on page layouts.

<define name="style-handout-master-attlist" combine="interleave">

<attribute name="style:page-layout-name">

<ref name="styleNameRef"/>

</attribute>

</define>

#### Page Style

The attribute draw:style-name assigns an additional formatting attributes to a handout master page by assigning a drawing page style. This attribute is optional. The fixed family for page styles is drawing-page.

<define name="style-handout-master-attlist" combine="interleave">

<optional>

<attribute name="draw:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Header Declaration

The presentation:use-header-name attribute specifies the name of the header field declaration (see section 9.11.2) that is used for all header fields (see section 9.10.1) that are displayed on the handout master page. See also section 9.1.4.

#### Footer Declaration

The presentation:use-footer-name attribute specifies the name of the footer field declaration (see section 9.11.3) that is used for all footer fields (see section 9.10.2) that are displayed on the handout master page. See also section 9.1.4.

#### Date and Time Declaration

The presentation:use-date-time-name attribute specifies the name of the date-time field declaration (see section 9.11.4) that is used for all date-time fields (see section 9.10.3) that are displayed on the handout master page. See also section 9.1.4.

### Layer Sets

The element <draw:layer-set> may be contained in the master styles of graphical applications. It defines a set of layers. Layers group drawing objects. Drawing objects may be assigned to these layers with the help of their draw:layer-name attribute.

<define name="draw-layer-set">

<element name="draw:layer-set">

<zeroOrMore>

<ref name="draw-layer"/>

</zeroOrMore>

</element>

</define>

### Layer

The <draw:layer> element defines a single layer.

<define name="draw-layer">

<element name="draw:layer">

<ref name="draw-layer-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

</element>

</define>

The <draw:layer element> may contain the following elements:

* Title (short accessible name). Use the <svg:title> child element as described in section 9.2.20.
* Long description (in support of accessibility). Use the <svg:desc> child element as described in section 9.2.20.

#### Name

Each element <draw:layer> is defined and referenced by its name that is contained in the draw:name attribute . Each drawing object inside a drawing or presentation document can be assigned to a layer. Layers virtually group the object. Each object that is assigned to a layer inherits the settings of the layer.

<define name="draw-layer-attlist" combine="interleave">

<attribute name="draw:name">

<ref name="string"/>

</attribute>

</define>

#### Protection

The draw:protected attribute specifies whether the drawing objects contain in the layer are protected from being modified.

<define name="draw-layer-attlist" combine="interleave">

<optional>

<attribute name="draw:protected" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Display

The draw:display attribute specifies whether the drawing objects contain in the layer are visible on the screen and/or printed.

<define name="draw-layer-attlist" combine="interleave">

<optional>

<attribute name="draw:display" a:defaultValue="always">

<choice>

<value>always</value>

<value>screen</value>

<value>printer</value>

<value>none</value>

</choice>

</attribute>

</optional>

</define>

### Drawing Pages

The element <draw:page> is a container for content in a drawing or presentation document. Drawing pages are used for the following:

* Forms (see section 11.1)
* Drawings (see section 9.2)
* Frames (see section 9.3)
* Presentation Animations (see section 9.7)
* Presentation Notes (see section 9.1.5)

A master page must be assigned to each drawing page.

<define name="draw-page">

<element name="draw:page">

<ref name="common-presentation-header-footer-attlist"/>

<ref name="draw-page-attlist"/>

<optional>

<ref name="office-forms"/>

</optional>

<zeroOrMore>

<ref name="shape"/>

</zeroOrMore>

<optional>

<choice>

<ref name="presentation-animations"/>

<ref name="animation-element"/>

</choice>

</optional>

<optional>

<ref name="presentation-notes"/>

</optional>

</element>

</define>

The attributes that may be associated with the <draw:page> element are:

* Page name
* Page style
* Master page
* Presentation page layout
* Header declaration
* Footer declaration
* Date and time declaration
* ID

The elements that my be included in the <draw:page> element are:

* Forms
* Shapes
* Animations
* Presentation notes

#### Page Name

The draw:name attribute specifies the name of a drawing page. This attribute is optional; if it is used, the name must be unique. If it is not used, the application may generate a unique name.

<define name="draw-page-attlist" combine="interleave">

<optional>

<attribute name="draw:name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Page Style

The attribute draw:style-name assigns an additional formatting attributes to a drawing page by assigning a drawing page style. This attribute is optional. The fixed family for page styles is drawing-page.

For pages inside a presentation document, attributes from can also be used.

<define name="draw-page-attlist" combine="interleave">

<optional>

<attribute name="draw:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Master Page

Each drawing page must have one master page assigned to it. The master page:

* Defines properties such as the size and borders of the drawing page
* Serves as a container for shapes that are used as a common background

The draw:master-page-name attribute specifies the name of the master page assigned to the drawing page. This attribute is required.

<define name="draw-page-attlist" combine="interleave">

<attribute name="draw:master-page-name">

<ref name="styleNameRef"/>

</attribute>

</define>

#### Presentation Page Layout

If the drawing page was created using a presentation page layout, the attribute presentation:presentation-page-layout-name links to the corresponding <style:presentation-page-layout> element. See section 14.15 for information on the presentation page layout element. This attribute is optional.

<define name="draw-page-attlist" combine="interleave">

<optional>

<attribute name="presentation:presentation-page-layout-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Header Declaration

The presentation:use-header-name attribute specifies the name of the header field declaration (see section 9.11.2) that is used for all header fields (see section 9.10.1) that are displayed on the page.

<define name="common-presentation-header-footer-attlist" combine="interleave">

<optional>

<attribute name="presentation:use-header-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Footer Declaration

The presentation:use-footer-name attribute specifies the name of the footer field declaration (see section 9.11.3) that is used for all footer fields (see section 9.10.2) that are displayed on the page.

<define name="common-presentation-header-footer-attlist" combine="interleave">

<optional>

<attribute name="presentation:use-footer-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Date and Time Declaration

The presentation:use-date-time-name attribute specifies the name of the date-time field declaration (see section 9.11.4) that is used for all date-time fields (see section 9.10.3) that are displayed on the page.

<define name="common-presentation-header-footer-attlist" combine="interleave">

<optional>

<attribute name="presentation:use-date-time-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### ID

The draw:id attribute assigns a unique ID to a drawing page.

<define name="draw-page-attlist" combine="interleave">

<optional>

<attribute name="draw:id">

<ref name="ID"/>

</attribute>

</optional>

</define>

#### Navigation Order

The draw:nav-order attribute defines a logical navigation sequence for the graphical elements included in the page. Its value is a sequence of unique IDREFs. If this optional attribute is present, it must include all graphic elements not contained within a <draw:g> element. This attribute should reflect the intentional ordering of graphics as set by the document author.

<define name="draw-page-attlist" combine="interleave">

<optional>

<attribute name="draw:nav-order">

<ref name="IDREFS"/>

</attribute>

</optional>

</define>

### Presentation Notes

Each drawing page element in a presentation can have an additional presentation notes page, which contains a preview of the corresponding drawing page and additional graphic shapes. A notes page is described by the <presentation:notes> element, that may be contained in the <draw:page> element. See section 14.4.2 for more information about this element.

Example: Drawing page

<office:automatic-styles>

<style:style style:name="gg3434" style:family="drawing-page">

<style:drawing-page-properties presentation:page-duration="5s">

</style:style>

<style:style style:name="titledia"

style:family="presentation-page-layout">

<presentation:placeholder presentation:object="title"

svg:x="20%" svg:y="10%"

svg:width="80%" svg:height="10%"/>

<presentation:placeholder presentation:object="subtitle"

svg:x="20%" svg:y="30%"

svg:width="80%" svg:height="60%" />

</style:style>

</office:automatic-styles>

...

<office:body>

<draw:page office:name="Page 1" draw:style-name="gg3434"

draw:master-page-name="home"

presentation:page-layout-name="titledia">

<draw:rect .../>

presentation:notes>

<draw:text ...>this is a note</draw:text>

</presentation:notes>  
 </draw:page>

</office:body>

## Drawing Shapes

This section describes drawing shapes that might occur within all kind of applications.

<define name="shape">

<choice>

<ref name="draw-rect"/>

<ref name="draw-line"/>

<ref name="draw-polyline"/>

<ref name="draw-polygon"/>

<ref name="draw-regular-polygon"/>

<ref name="draw-path"/>

<ref name="draw-circle"/>

<ref name="draw-ellipse"/>

<ref name="draw-g"/>

<ref name="draw-page-thumbnail"/>

<ref name="draw-frame"/>

<ref name="draw-measure"/>

<ref name="draw-caption"/>

<ref name="draw-connector"/>

<ref name="draw-control"/>

<ref name="dr3d-scene"/>

<ref name="draw-custom-shape"/>

</choice>

</define>

### Rectangle

The <draw:rect> element represents a rectangular drawing shape.

<define name="draw-rect">

<element name="draw:rect">

<ref name="draw-rect-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:rect> element are:

* Position, Size, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15.
* Text anchor, table background, draw end position – see section 9.2.16.
* Round corners

The elements that may be contained in the <draw:rect> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

#### Round Corners

The attribute draw:corner-radius specifies the radius of the circle used to round off the corners of the rectangle.

<define name="draw-rect-attlist" combine="interleave">

<optional>

<attribute name="draw:corner-radius">

<ref name="nonNegativeLength"/>

</attribute>

</optional>

</define>

Example: Rectangular drawing shape

<draw:rect svg:x="2cm" svg:y="3cm" svg:width="10cm" svg:height="20cm" svg:transform="rotate(45)" draw:style-name="object-with-shadow">

### Line

The <draw:line> element represents a line.

<define name="draw-line">

<element name="draw:line">

<ref name="draw-line-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:line> element are:

* Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15.
* Text anchor, table background, draw end position– see section 9.2.16.
* Start point
* End point

The elements that may be contained in the <draw:line> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

#### Start Point

The start point attributes svg:x1 and svg:y1 specify the start coordinates of the line.

<define name="draw-line-attlist" combine="interleave">

<attribute name="svg:x1">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:y1">

<ref name="coordinate"/>

</attribute>

</define>

#### End Point

The end point attributes svg:x2 and svg:y2 specify the end coordinates of the line.

<define name="draw-line-attlist" combine="interleave">

<attribute name="svg:x2">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:y2">

<ref name="coordinate"/>

</attribute>

</define>

### Polyline

The <draw:polyline> element represents a polyline drawing shape.

Some implementations may ignore the size attribute, and instead determine the size of a shape exclusively from the shape data (i.e., polygon vertices).

<define name="draw-polyline">

<element name="draw:polyline">

<ref name="common-draw-points-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-viewbox-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:polyline> element are:

* Position, Size, View box, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15
* Text anchor, table background, draw end position – see section 9.2.16
* Points

The elements that may be contained in the <draw:polyline> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

#### Points

The draw:points attribute stores a sequence of points, which are connected by straight lines. Each point consists of two coordinates. The coordinates are separated by a comma and the points are separated by white spaces.

<define name="common-draw-points-attlist">

<attribute name="draw:points">

<ref name="points"/>

</attribute>

</define>

### Polygon

The <draw:polygon> element represents a polygon. A polygon is a closed set of straight lines.

Some implementations may ignore the size attribute, and instead determine the size of a shape exclusively from the shape data (i.e., polygon vertices).

<define name="draw-polygon">

<element name="draw:polygon">

<ref name="common-draw-points-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-viewbox-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:polygon> element are:

* Position, Size, View box, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15
* Text anchor, table background, draw end position – see section 9.2.16
* Points – see section 9.2.3

The elements that may be contained in the <draw:polygon> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

### Regular Polygon

The <draw:regular-polygon> element represents a regular polygon. A regular polygon is a polygon that is specified by its number of edges (that is equal to the number of its corners), rather than by arbitrary points.

<define name="draw-regular-polygon">

<element name="draw:regular-polygon">

<ref name="draw-regular-polygon-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:polygon> element are:

* Position, Size, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15
* Text anchor, table background, draw end position – see section 9.2.16
* Concave
* Corners
* Sharpness

The elements that may be contained in the <draw:regular-polygon> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

#### Concave

The draw:concave attribute specifies whether the polygon is convex or concave. For a convex polygon, the polygon corners are located on a single ellipse which has its center in the center of the polygon. In a concave polygon, two such ellipses are required, and corners that are located next to each other are located on different ellipses. An example for a convex polygon is a hexagon. An example for a concave polygon is a star. For concave polygons, an additional draw:sharpness attribute is required.

<define name="draw-regular-polygon-attlist" combine="interleave">

<choice>

<attribute name="draw:concave">

<value>false</value>

</attribute>

<group>

<attribute name="draw:concave">

<value>true</value>

</attribute>

<ref name="draw-regular-polygon-sharpness-attlist"/>

</group>

</choice>

</define>

#### Corners

The draw:corners attribute specifies the number of polygon corners.

<define name="draw-regular-polygon-attlist" combine="interleave">

<attribute name="draw:corners">

<ref name="positiveInteger"/>

</attribute>

</define>

#### Sharpness

For concave attributes, the draw:sharpness attribute specifies the radius of the ellipse on which the inner polygon corners are located. The value is a percentage, where 0% means that all corners are located on a single ellipse, while 100% means that the inner corners are located at the center point of the polygon. In general, if *r* is the radius of the polygon, and *s* is the sharpness, the inner corners a located on a ellipse that's radius is *r(100-s)/100*.

<define name="draw-regular-polygon-sharpness-attlist">

<attribute name="draw:sharpness">

<ref name="percent"/>

</attribute>

</define>

### Path

The <draw:path> element represents a path. A path is a shape with a user-defined outline. The shape is built using multiple drawing actions such as:

* moveto – set a new current point
* lineto – draw a straight line
* curveto – draw a curve using a cubic Bézier
* arc – draw an elliptical or circular arc
* closepath – close the current shape by drawing a line to the last moveto

Compound paths are paths with subpaths, each subpath consisting of a single moveto followed by one or more line or curve operations. Compound paths can be used for effects such as holes in objects.

Some implementations may ignore the size attribute, and instead determine the size of a shape exclusively from the shape data (i.e., polygon vertices).

<define name="draw-path">

<element name="draw:path">

<ref name="common-draw-path-data-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-viewbox-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:path> element are:

* Position, Size, View box, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15
* Text anchor, table background, draw end position – see section 9.2.16
* Path data

The elements that may be contained in the <draw:path> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

#### Path Data

The syntax for the attribute svg:d is described in §8 of the *Scalable Vector Graphics (SVG) 1.1 Specification* [SVG].

Some implementations may only supports a subset of the SVG path specification, for instance no mixtures of open and closed curves for one shape, or no elliptical arc command.

<define name="common-draw-path-data-attlist">

<attribute name="svg:d">

<ref name="pathData"/>

</attribute>

</define>

### Circle

The <draw:circle> element represents a circular drawing shape.

<define name="draw-circle">

<element name="draw:circle">

<ref name="draw-circle-attlist"/>

<ref name="common-draw-circle-ellipse-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:circle> element are:

* Position, Size, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15
* Text anchor, table background, draw end position – see section 9.2.16
* Center point
* Radius
* Kind
* Start angle
* End angle

The elements that may be contained in the <draw:circle> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

#### Center Point

The center point attributes svg:cx and svg:cy specify the coordinates of the center point of the circle. If these optional attributes are not set, the position and size attributes are used to create them.

<define name="common-draw-circle-ellipse-attlist" combine="interleave">

<optional>

<attribute name="svg:cx">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:cy">

<ref name="coordinate"/>

</attribute>

</optional>

</define>

#### Radius

The svg:r attribute specifies the radius of the circle. If this optional attribute are not set, the position and size attributes are used to create circle.

<define name="draw-circle-attlist" combine="interleave">

<optional>

<attribute name="svg:r">

<ref name="length"/>

</attribute>

</optional>

</define>

#### Kind

The draw:kind attribute specifies the appearance of the circle.

* full specifies a full circle or ellipse, like .
* section specifies a section of a circle or ellipse, like .
* cut specifies a circle or ellipse with a cut, like .
* arc specifies a circle or ellipse arc, like .

<define name="common-draw-circle-ellipse-attlist" combine="interleave">

<optional>

<attribute name="draw:kind" a:defaultValue="full">

<choice>

<value>full</value>

<value>section</value>

<value>cut</value>

<value>arc</value>

</choice>

</attribute>

</optional>

</define>

#### Start Angle

For circles where the draw:kind attribute value is section, cut or arc, the svg:start-angle attribute specifies the start angle of the section, cut, or arc.

<define name="common-draw-circle-ellipse-attlist" combine="interleave">

<optional>

<attribute name="draw:start-angle">

<ref name="double"/>

</attribute>

</optional>

</define>

#### End Angle

For circles where the draw:kind attribute value is section, cut or arc, the svg:end-angle attribute specifies the end angle of the section, cut, or arc.

<define name="common-draw-circle-ellipse-attlist" combine="interleave">

<optional>

<attribute name="draw:end-angle">

<ref name="double"/>

</attribute>

</optional>

</define>

### Ellipse

The <draw:ellipse> element represents an ellipse.

<define name="draw-ellipse">

<element name="draw:ellipse">

<ref name="common-draw-circle-ellipse-attlist"/>

<ref name="draw-ellipse-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:ellipse> element are:

* Position, Size, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15
* Text anchor, table background, draw end position – see section 9.2.16
* Center point, Kind, Start angle, End angle – see section 9.2.7
* Radius

The elements that may be contained in the <draw:ellipse> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

#### Radius

The svg:rx and svg:rx attribute specify the horizontal and vertical radius of the ellipse. If these optional attributes are not set, the position and size attributes are used to create the ellipse.

<define name="draw-ellipse-attlist" combine="interleave">

<optional>

<attribute name="svg:rx">

<ref name="length"/>

</attribute>

<attribute name="svg:ry">

<ref name="length"/>

</attribute>

</optional>

</define>

### Connector

The <draw:connector> element represents a series of lines that are connected to the glue points of two other shapes.

<define name="draw-connector">

<element name="draw:connector">

<ref name="draw-connector-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:connector> element are:

* Style, Layer, Z-Index, ID and Caption ID – see section 9.2.15
* Text anchor, table background, draw end position – see section 9.2.16
* Type
* Start position
* Start shape
* Start glue point
* End position
* End shape
* End glue point
* Line skew

The elements that may be contained in the <draw:connector> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

#### Type

The draw:type attribute specifies how the connection between two points is rendered. The value of this attribute can be standard, lines, line, or curve.

* standard: a standard connector escapes the two connecting objects with straight lines and connects them with a straight perpendicular line.
* lines: a lines connector escapes the two connecting objects with straight lines and connects them with a straight (not necessarily perpendicular) line.
* line: a line connector draws one straight line between the two escape points of the connected objects.
* curve: a curve connector draws a single curved line between the two escape points of the connected objects.

<define name="draw-connector-attlist" combine="interleave">

<optional>

<attribute name="draw:type" a:defaultValue="standard">

<choice>

<value>standard</value>

<value>lines</value>

<value>line</value>

<value>curve</value>

</choice>

</attribute>

</optional>

</define>

#### Start Position

The start position attributes svg:x1 and svg:y1 specify the start position of a connector.

If the start position is connected to a shape, these attributes are optional because the start position defaults to the corresponding glue point on the target shape.

<define name="draw-connector-attlist" combine="interleave">

<optional>

<attribute name="svg:x1">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:y1">

<ref name="coordinate"/>

</attribute>

</optional>

</define>

#### Start Shape

The draw:start-shape attribute identifies the drawing shape to which the start of this connector is connected by its name.

If a shape is connected to the start of a connector, the start position defaults to the corresponding glue point on the target shape.

<define name="draw-connector-attlist" combine="interleave">

<optional>

<attribute name="draw:start-shape">

<ref name="IDREF"/>

</attribute>

</optional>

</define>

#### Start Glue Point

The draw:start-glue-point attribute identifies the glue point in the start shape of the connector by its number. See section 9.2.19 for details on glue points.

If this attribute is not set and the start of the connector is connected to a shape, the application may choose the glue point. If the start of the connector is not connected to a shape, this attribute is ignored.

<define name="draw-connector-attlist" combine="interleave">

<optional>

<attribute name="draw:start-glue-point">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

#### End Position

The end position attributes svg:x2 and svg:y2 specify the end position of a connector.

If the end position is connected to a shape, these attributes are optional because the end position defaults to the corresponding glue point on the target shape.

<define name="draw-connector-attlist" combine="interleave">

<optional>

<attribute name="svg:x2">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:y2">

<ref name="coordinate"/>

</attribute>

</optional>

</define>

#### End Shape

The draw:end-shape attribute identifies the drawing shape to which the end of the connector is connected by its name.

If a shape is connected to the end of a connector, the end position defaults to the corresponding glue point on the target shape.

<define name="draw-connector-attlist" combine="interleave">

<optional>

<attribute name="draw:end-shape">

<ref name="IDREF"/>

</attribute>

</optional>

</define>

#### End Glue Point

The draw:end-glue-point attribute identifies the glue point in the end shape of the connector by its number. See section 9.2.19 for details on glue points.

If this attribute is not set and the end of the connector is connected to a shape, the application may choose the glue point. If the end of the connector is not connected to a shape, this attribute is ignored.

<define name="draw-connector-attlist" combine="interleave">

<optional>

<attribute name="draw:end-glue-point">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

#### Line Skew

The draw:line-skew attribute controls the generation of the lines that connect the start and end points. Depending on the type of connector, this can vary from one to three distances that move the connector lines relative to their normal position.

<define name="draw-connector-attlist" combine="interleave">

<optional>

<attribute name="draw:line-skew">

<list>

<ref name="length"/>

<optional>

<ref name="length"/>

<optional>

<ref name="length"/>

</optional>

</optional>

</list>

</attribute>

</optional>

</define>

### Caption

The <draw:caption> element represents a rectangular drawing shape with an additional set of lines. It can be used as a description for a fixed point inside a drawing.

<define name="draw-caption">

<element name="draw:caption">

<ref name="draw-caption-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:caption> element are:

* Position, Size, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15
* Text anchor, table background, draw end position – see section 9.2.16
* Caption point
* Round corners

The elements that may be contained in the <draw:caption> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

#### Caption Point

The caption point attributes draw:caption-point-x and draw:caption-point-y specify the position of the point that is captioned. A set of lines are rendered from the caption area.

<define name="draw-caption-attlist" combine="interleave">

<optional>

<attribute name="draw:caption-point-x">

<ref name="coordinate"/>

</attribute>

<attribute name="draw:caption-point-y">

<ref name="coordinate"/>

</attribute>

</optional>

</define>

#### Round Corners

The draw:corner-radius attribute specifies the radius of the circle used to round off the corners of the caption.

<define name="draw-caption-attlist" combine="interleave">

<optional>

<attribute name="draw:corner-radius">

<ref name="nonNegativeLength"/>

</attribute>

</optional>

</define>

### Measure

The <draw:measure> element represents a shape that is used to measure distances in drawings.

<define name="draw-measure">

<element name="draw:measure">

<ref name="draw-measure-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:measure> element are:

* Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15
* Text anchor, table background, draw end position – see section 9.2.16
* Start position
* End position

The elements that may be contained in the <draw:measure> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.

#### Start Position

The attributes svg:x1 and svg:y1 specify the start point of the measured distance.

<define name="draw-measure-attlist" combine="interleave">

<attribute name="svg:x1">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:y1">

<ref name="coordinate"/>

</attribute>

</define>

#### Draw End Position

The attributes svg:x2 and svg:y2 specify the end point of the measured distance.

<define name="draw-measure-attlist" combine="interleave">

<attribute name="svg:x2">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:y2">

<ref name="coordinate"/>

</attribute>

</define>

### Control

The <draw:control> element represents a shape that is linked to a control inside an <office:forms> element (see section 11.1).

<define name="draw-control">

<element name="draw:control">

<ref name="draw-control-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <draw:control> element are:

* Position, Size, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15.
* Text anchor, table background, draw end position – see section 9.2.16
* Control

The elements that may be contained in the <draw:control> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Glue points – see section 9.2.19.

#### Control

The attributes draw:control attribute specifies the control within a form (see section 11.5.2) that is linked to the control shape.

<define name="draw-control-attlist" combine="interleave">

<attribute name="draw:control">

<ref name="IDREF"/>

</attribute>

</define>

### Page Thumbnail

The <draw:page-thumbnail> element represents a rectangular area that displays the thumbnail of a drawing page.

<define name="draw-page-thumbnail">

<element name="draw:page-thumbnail">

<ref name="draw-page-thumbnail-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="presentation-shape-attlist"/>

<ref name="common-draw-shape-with-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

</element>

</define>

The attributes that may be associated with the <draw:page-thumbnail> element are:

* Position, Size, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15.
* Text anchor, table background, draw end position – see section 9.2.16
* Presentation class – see section 9.6.1
* Page number

The elements that may be contained in the <draw:page-thumbnail> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.

#### Page Number

The draw:page-number attribute specifies the number of the page that is displayed as a thumbnail. For thumbnails on notes pages, the value of this attribute is fixed to the drawing page of the notes page. For thumbnails on handout master pages, the value of this attribute is the order in which the pages are previewed on the handout. For example, on a handout page with 4 thumbnails, the thumbnail with the lowest page number displays the first page when printing the first handout page and the fifth page when printing the second handout page and so on.

<define name="draw-page-thumbnail-attlist">

<optional>

<attribute name="draw:page-number">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

### Grouping

The <draw:g> element represents a group of drawing shapes.

<define name="draw-g">

<element name="draw:g">

<ref name="draw-g-attlist"/>

<ref name="common-draw-z-index-attlist"/>

<ref name="common-draw-name-attlist"/>

<ref name="common-draw-id-attlist"/>

<ref name="common-draw-style-name-attlist"/>

<ref name="common-text-spreadsheet-shape-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<zeroOrMore>

<ref name="shape"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <draw:g> element are:

* Style, Z-Index, ID and Caption ID – see section 9.2.15.
* Text anchor, table background, draw end position – see section 9.2.16
* Position

The elements that may be contained in the <draw:g> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Drawing shapes.

#### Position

For group shapes that are contained in text documents and anchored as character, the svg:y attribute specifies the vertical position of the shape.

<define name="draw-g-attlist" combine="interleave">

<optional>

<attribute name="svg:y">

<ref name="coordinate"/>

</attribute>

</optional>

</define>

### Common Drawing Shape Attributes

The attributes described in this section are common to all drawing shapes.

#### Name

The attribute draw:name assigns a name to the drawing shape.

<define name="common-draw-name-attlist" combine="interleave">

<optional>

<attribute name="draw:name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Caption-ID

The draw:caption-id attribute establishes a relationship between a drawing objects and its caption. It takes a value of type IDREF. The value for draw:caption-id attribute is the target ID assigned to the <draw:text-box> (see section 9.3.1) used to represent the corresponding caption.

When a caption is assigned by a user agent, an id must be assigned to the element containing the text used to caption a drawing element. The drawing element being captioned must then be assigned the draw:caption-id attribute with an IDREF equivalent to the id <draw:text-box> containing the captioning text, thus establishing a relationship between the captioned text and the object captioned as needed for accessibility. Removing the caption should result in removing the draw:caption-id attribute of the object that was being captioned.

If the user agent supports a platform which provides a draw:caption-id relationship in its accessibility API, this relationship for captions should be used to fulfill the relationship.

See appendix E for guidelines how to use this attribute.

<define name="common-draw-caption-id-attlist" combine="interleave">

<optional>

<attribute name="draw:caption-id">

<ref name="IDREF"/>

</attribute>

</optional>

</define>

#### Position

The position attributes svg:x and svg:y specify the x and y coordinates of the start position of the drawing shape.

<define name="common-draw-position-attlist">

<optional>

<attribute name="svg:x">

<ref name="coordinate"/>

</attribute>

</optional>

<optional>

<attribute name="svg:y">

<ref name="coordinate"/>

</attribute>

</optional>

</define>

#### Size

The attributes svg:width and svg:height specify the width and height of the drawing shape.

<define name="common-draw-size-attlist">

<optional>

<attribute name="svg:width">

<ref name="length"/>

</attribute>

</optional>

<optional>

<attribute name="svg:height">

<ref name="length"/>

</attribute>

</optional>

</define>

#### Transformation

The draw:transform attribute specifies a list of transformations that can be applied to a drawing shape.

The value of this attribute is a list of transform definitions, which are applied to the drawing shape in the order in which they are listed. The transform definitions in the list must be separated by a white space and/or a comma. The types of transform definitions available include:

* matrix(<a> <b> <c> <d> <e> <f>), which specifies a transformation in the form of a transformation matrix of six values. matrix(a,b,c,d,e,f) is the equivalent of applying the transformation matrix [a b c d e f].
* translate(<tx> [<ty>]), which specifies a translation by tx and ty.
* scale(<sx> [<sy>]), which specifies a scale operation by sx and sy. If <sy> is not provided, it is assumed to be equal to <sx>.
* rotate(<rotate-angle>), which specifies a rotation by <rotate-angle> about the origin of the shapes coordinate system.
* skewX(<skew-angle>), which specifies a skew transformation along the X axis.
* skewY(<skew-angle>), which specifies a skew transformation along the Y axis.

<define name="common-draw-transform-attlist">

<optional>

<attribute name="draw:transform">

<ref name="string"/>

</attribute>

</optional>

</define>

#### View Box

The svg:viewBox attribute establishes a user coordinate system inside the physical coordinate system of the shape specified by the position and size attributes. This user coordinate system is used by the svg:points attribute and the <draw:path> element.

The syntax for using this attribute is the same as the [SVG] syntax. The value of the attribute are four numbers separated by white spaces, which define the left, top, right, and bottom dimensions of the user coordinate system.

Some implementations may ignore the view box attribute. The implied coordinate system then has its origin at the left, top corner of the shape, without any scaling relative to the shape.

<define name="common-draw-viewbox-attlist">

<attribute name="svg:viewBox">

<list>

<ref name="integer"/>

<ref name="integer"/>

<ref name="integer"/>

<ref name="integer"/>

</list>

</attribute>

</define>

#### Style

The draw:style-name and presentation:style-name attributes specify a style for the drawing shape. If draw:style-name is used, the shape is a regular graphic shape. If presentation:style-name is used, the shape is a presentation shape as described in section 9.6.

The value of both attributes is the name of a <style:style> element. If the draw:style-name attribute is used, the style must have a family value of graphic. If the presentation:style-name is used, the style must have a family value of presentation. The formatting properties of the specified style and its optional parent styles are used to format the shape. See also section 14.13.1.

The draw:class-names and presentation:class-names attributes take a whitespace separated list of either graphic or presentation style names. The referenced styles are applied in the order they are contained in the list. If both, draw:style-name and draw:class-names, or both presentation:style-name and presentation:class-names are present, the style referenced by the style-name attribute is treated as the first style in the list in the class-names attribute. Conforming application should support the class-names attribute and also should preserve it while editing.

<define name="common-draw-style-name-attlist">

<choice>

<group>

<optional>

<attribute name="draw:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<optional>

<attribute name="draw:class-names">

<ref name="styleNameRefs"/>

</attribute>

</optional>

</group>

<group>

<optional>

<attribute name="presentation:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

<optional>

<attribute name="presentation:class-names">

<ref name="styleNameRefs"/>

</attribute>

</optional>

</group>

</choice>

</define>

#### Text Style

The draw:text-style-name attribute specifies a style for the drawing shape that is used to format the text that can be added to this shape.

The value of this attribute is the name of a <style:style> element with a family value of paragraph.

<define name="common-draw-text-style-name-attlist">

<optional>

<attribute name="draw:text-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Layer

The attribute draw:layer can assign each shape to a layer. The value of this attribute must be the name of a layer inside the layer-set of the document.

<define name="common-draw-layer-name-attlist">

<optional>

<attribute name="draw:layer">

<data type="string"/>

</attribute>

</optional>

</define>

#### ID

The draw:id attribute assigns an unique ID to a drawing shape that can be used to reference the shape.

<define name="common-draw-id-attlist">

<optional>

<attribute name="draw:id">

<ref name="ID"/>

</attribute>

</optional>

</define>

#### Z-Index

Drawing shapes are rendered in a specific order. In general, the shapes are rendered in the order in which they appear in the XML document. To change the order, use the svg:z-index attribute.

This attribute is optional.

<define name="common-draw-z-index-attlist">

<optional>

<attribute name="draw:z-index">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Common Shape Attributes for Text and Spreadsheet Documents

The attributes described in this section are common to all drawing shapes contained in text and spreadsheet documents.

#### End Position

If a drawing shape is included in a spreadsheet document and if the anchor of the shape is in a cell, then the attributes table:end-cell-address, table:end-x and table:end-y specify the end position of the shape and the size attributes are ignored. The end position is specified using the cell address of the cell in which the end position is located, and the x and y coordinates of the end position relative to the top left edge of the cell.

<define name="common-text-spreadsheet-shape-attlist" combine="interleave">

<optional>

<attribute name="table:end-cell-address">

<ref name="cellAddress"/>

</attribute>

</optional>

<optional>

<attribute name="table:end-x">

<ref name="coordinate"/>

</attribute>

</optional>

<optional>

<attribute name="table:end-y">

<ref name="coordinate"/>

</attribute>

</optional>

</define>

#### Table Background

If a drawing shape is included in a spreadsheet document, then the table:table-background attribute specifies whether or not the shape is in the table background. If the attribute is not existing, the shape is included in the foreground of the table.

<define name="common-text-spreadsheet-shape-attlist" combine="interleave">

<optional>

<attribute name="table:table-background">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Text Anchor

Within text documents, the anchor type attribute text:anchor-type specifies how a frame is bound to the text document. The anchor position is the point at which a frame is bound to a text document. The anchor position depends on the anchor type as explained in the following table.

| If the value of the text:anchor-type attribute is ... | The anchor position is... | The drawing shape element appears ... | Notes |
| --- | --- | --- | --- |
| page | The page that has the same physical page number as the value of the text:anchor-page-number attribute that is attached to the drawing shape element. If no text:anchor-page-number attribute is given, the anchor position is the page at which the character behind the drawing object element appears. | Either   * At the start of the document body, outside any paragraph or frame, provided a text:anchor-page-number attribute is given.   Or   * Inside any paragraph element that is not contained in a header, footer, footnote, or text box, if a text:anchor-page-number attribute is not given. | The physical page number is the number assigned to the page if all pages in the document are counted starting with page 1. |
| frame | The parent text box that the current drawing shape element is contained in. | In the element representing the text box to which the drawing object is bound. For example, if an image is bound to a text box, the image element is located in the text box element. |  |
| paragraph | The paragraph that the current drawing shape element is contained in. | At the start of the paragraph element. |  |
| char | The character after the drawing shape element. | Just before the character. |  |
| as-char | There is no anchor position. The drawing shape behaves like a character. | At the position where the character appears in the document. |  |

<define name="common-text-spreadsheet-shape-attlist" combine="interleave">

<ref name="common-text-anchor-attlist"/>

</define>

<define name="common-text-anchor-attlist" combine="interleave">

<optional>

<attribute name="text:anchor-type">

<choice>

<value>page</value>

<value>frame</value>

<value>paragraph</value>

<value>char</value>

<value>as-char</value>

</choice>

</attribute>

</optional>

</define>

#### Anchor Page Number

Within text documents, the text:anchor-page-number attribute specifies the physical page number of an anchor if the drawing object is bound to a page.

<define name="common-text-anchor-attlist" combine="interleave">

<optional>

<attribute name="text:anchor-page-number">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

### Common Drawing Shape Content

Most drawing shapes may contain text content. The text content may contain paragraphs (see section 4.1.2) as well as lists (see section 4.3).

<define name="draw-text">

<zeroOrMore>

<choice>

<ref name="text-p"/>

<ref name="text-list"/>

</choice>

</zeroOrMore>

</define>

### Common Shape Attribute Groups

The following defined attributes are common for all shapes that supports styles and no text.

<define name="common-draw-shape-with-styles-attlist">

<ref name="common-draw-z-index-attlist"/>

<ref name="common-draw-id-attlist"/>

<ref name="common-draw-layer-name-attlist"/>

<ref name="common-draw-style-name-attlist"/>

<ref name="common-draw-transform-attlist"/>

<ref name="common-draw-name-attlist"/>

<ref name="common-text-spreadsheet-shape-attlist"/>

</define>

The following defined attributes are common for all shapes that supports styles and text.

<define name="common-draw-shape-with-text-and-styles-attlist">

<ref name="common-draw-shape-with-styles-attlist"/>

<ref name="common-draw-text-style-name-attlist"/>

</define>

### Glue Points

Glue points are designated points on the area of a drawing object to which a connector shape can connect. Most drawing objects have four standard glue points at the four edges of the object. Additional glue points may be added to a drawing object by inserting one or more <draw:glue-point> elements into a drawing object element. A <draw:glue-point> element creates a single user-defined glue point if placed inside a drawing object element, for example, a <draw:rectangle> element.

<define name="draw-glue-point">

<element name="draw:glue-point">

<ref name="draw-glue-point-attlist"/>

<empty/>

</element>

</define>

#### ID

The draw:id attribute contains the id of the glue point. The id a number and is used inside the draw:start-glue-point and draw:end-glue-point attributes of a <draw:connector> element. The Ids 0 to 3 are reserved for the 4 standard glue points that most drawing objects have. The glue points are numbered clockwise, starting at the top left corner of the shape.

<define name="draw-glue-point-attlist" combine="interleave">

<attribute name="draw:id">

<ref name="nonNegativeInteger"/>

</attribute>

</define>

#### Position

The svg:x and svg:y attributes specifies the position of the glue point. The coordinates are either percentage values relative to the drawing objects center or, if the draw:align attribute is also specified, absolute distance values relative to the edge specified with the draw:align attribute.

<define name="draw-glue-point-attlist" combine="interleave">

<attribute name="svg:x">

<choice>

<ref name="distance"/>

<ref name="percent"/>

</choice>

</attribute>

<attribute name="svg:y">

<choice>

<ref name="distance"/>

<ref name="percent"/>

</choice>

</attribute>

</define>

#### Align

The attribute draw:align specifies the alignment behavior of the glue point if the drawing object is resized and the shape edge to which the glue point's position relates. A missing vertical or horizontal position in the attribute's value means that the glue point is horizontally or vertically centered.

<define name="draw-glue-point-attlist" combine="interleave">

<optional>

<attribute name="draw:align">

<choice>

<value>top-left</value>

<value>top</value>

<value>top-right</value>

<value>left</value>

<value>center</value>

<value>right</value>

<value>bottom-left</value>

<value>bottom-right</value>

</choice>

</attribute>

</optional>

</define>

#### Escape Direction

The attribute draw:escape-direction specifies the direction in which the connection line escapes from the drawing object if a connector connects to the glue point. The value horizontal means the the connection line may escape to the left or to the right, the value vertical means that the connection line may escape up or down. The value auto means that the connection line may escape in all four directions.

<define name="draw-glue-points-attlist" combine="interleave">

<attribute name="draw:escape-direction">

<choice>

<value>auto</value>

<value>left</value>

<value>right</value>

<value>up</value>

<value>down</value>

<value>horizontal</value>

<value>vertical</value>

</choice>

</attribute>

</define>

### Title and Description

The <svg:title> and <svg:desc> elements specify text-only description strings for graphical objects as specified in §5.4 of [SVG].

The <svg:title> element is used as a short accessible name.

<define name="svg-title">

<element name="svg:title">

<text/>

</element>

</define>

The <svg:desc> element is used for the long description in support of accessibility.

<define name="svg-desc">

<element name="svg:desc">

<text/>

</element>

</define>

See appendix E for guidelines how to use these elements.

The <svg:title> and <svg:desc> elements can be used with the following drawing shape elements:

* <draw:rect>
* <draw:line>
* <draw:polyline>
* <draw:polygon>
* <draw:regular-polygon>
* <draw:path>
* <draw:circle>
* <draw:ellipse>
* <draw:g>
* <draw:page-thumbnail>
* <draw:frame>
* <draw:measure>
* <draw:caption>
* <draw:connector>
* <draw:control>
* <dr3d:scene>
* <draw:custom-shape>

It is further supported by layers (see section 9.1.3) and client side image maps (see section 9.3.10).

### Event Listeners

Drawing shapes may have event listeners attached. The event listeners that are attached to, for example, a text box or an image, are represented by an event listener element as described in section 12.4. This element is contained within the drawing object element, for example, the <draw:text-box> element or the <draw:image> element.

## Frames

A **frame** is a rectangular container where that contains enhanced content like text boxes, images or objects. Frames are very similar to regular drawing shapes, but support some features that are not available for regular drawing shapes, like contours, image maps and hyperlinks. In particular, a frame allows to have multiple renditions of an object. That is, a frame may for instance contain an object as well as an image. In this case, the application may choose the content that it supports best. If the application supports the object type contained in the frame, it probably will render the object. If it does not support the object, it will render the image.

In general, an application must not render more than one of the content elements contained in a frame. The order of content elements dictates the document author's preference for rendering, with the first child being the most preferred. This means that applications should render the first child element that it supports. A frame must contain at least one content element. The inclusion of multiple content elements is optional. Application may preserve the content elements they don't render, but don't have to.

Within text documents, frames are also used to position content outside the default text flow of a document.

Frames can contain:

* Text boxes
* Objects represented either in the OpenDocument format or in a object specific binary format
* Images
* Applets
* Plug-ins
* Floating frames

Like the formatting properties of drawing shapes, frame formatting properties are stored in styles belonging to the graphic family. The way a frame is contained in a document also is the same as for drawing shapes.

<define name="draw-frame">

<element name="draw:frame">

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-rel-size-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<ref name="presentation-shape-attlist"/>

<ref name="draw-frame-attlist"/>

<zeroOrMore>

<choice>

<ref name="draw-text-box"/>

<ref name="draw-image"/>

<ref name="draw-object"/>

<ref name="draw-object-ole"/>

<ref name="draw-applet"/>

<ref name="draw-floating-frame"/>

<ref name="draw-plugin"/>

</choice>

</zeroOrMore>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<optional>

<ref name="draw-image-map"/>

</optional>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<choice>

<ref name="draw-contour-polygon"/>

<ref name="draw-contour-path"/>

</choice>

</optional>

</element>

</define>

The attributes that may be associated with the <draw:frame> element are:

* Position, Size (relative sizes, see below), Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15.
* Text anchor, table background, draw end position – see section 9.2.16
* Presentation class – see section 9.6.1
* Copy frames

The following elements may be contained in the image element:

* Event Listeners – see section 12.4.
* Glue Points – see section 9.2.19.
* Image Map – see section 9.3.10.
* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Contour – see section 9.3.8.

#### Relative Sizes

For frames, the width and height of the drawing object may be specified as a relative value using the style:rel-width and style:rel-height attributes. The relative value either is a percentage value, the special value scale, or the special value scale-min.

The interpretation of relative values depends on the anchor of the drawing object. If the anchor for the drawing object is in a table cell, the percentage value relates to the surrounding table box. If the anchor for the drawing object is in a text box, the percentage value relates to the surrounding text box. In other cases, the percentage values relate to the width of the page or window.

The value scale for the width means that the width should be calculated depending on the height, so that the ratio of with and height of the original image or object size is preserved.

The value scale for the height means that the height should be calculated depending on the width, so that the ratio of with and height of the original image or object size is preserved.

The value scale-min equals the value scale, except that the calculated width or height is a minimum height rather than an absolute one.

To support application that don't support relative with and heights, applications that save the attributes style:rel-width or style:rel-height should also provide the real width and heights in the svg:width and svg:height/fo:min-height attributes.

<define name="common-draw-rel-size-attlist">

<ref name="common-draw-size-attlist"/>

<optional>

<attribute name="style:rel-width">

<choice>

<ref name="percent"/>

<value>scale</value>

<value>scale-min</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="style:rel-height">

<choice>

<ref name="percent"/>

<value>scale</value>

<value>scale-min</value>

</choice>

</attribute>

</optional>

</define>

#### Copy Frames

Multiple frames can be set to display the exact same underlying data: for instance for a company logo, that must appear somewhere on every page, without being part of a header or footer.

A frame can be set to display the contents of another frame, referenced by the draw:copy-of attribute. This does not effect style and position information. This is, the frame that has the draw:copy-of attribute has its own style and position information and does not use the one of the referenced frame.

<define name="draw-frame-attlist" combine="interleave">

<optional>

<attribute name="draw:copy-of">

<ref name="string"/>

</attribute>

</optional>

</define>

### Text Box

The <draw:text-box>element represents a text box. A text box may be used to place text in a container that is outside of the normal flow of the document.

<define name="draw-text-box">

<element name="draw:text-box">

<ref name="draw-text-box-attlist"/>

<zeroOrMore>

<ref name="text-content"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <draw:text-box> element are:

* Chain
* Round Corners
* Minimum Height and Width
* Maximum Height and Width

Text boxes don't support contours as described in section 9.3.8 and alternative texts as described in section 9.2.20.

#### Chain

Text boxes can be chained, in other words, if the content of a text box exceeds its capacity, the content flows into the next text box in the chain. To chain text boxes, the attribute draw:chain-next-name is used, The value of this attribute is the name of the next text box in the chain. Chained text boxes usually are supported by text documents only.

<define name="draw-text-box-attlist" combine="interleave">

<optional>

<attribute name="draw:chain-next-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Round Corners

The attribute draw:corner-radius specifies the radius of the circle used to round off the corners of the text-box.

<define name="draw-text-box-attlist" combine="interleave">

<optional>

<attribute name="draw:corner-radius">

<ref name="nonNegativeLength"/>

</attribute>

</optional>

</define>

#### Minimum Height and Width

The fo:min-height and fo:min-width attributes specify a minimum height or width for a text box. If they are existing, they overwrite the height or width of a text box specified by the svg:height and svg:width attributes of the surrounding <draw:frame> element. Their value can be either a length or a percentage. If the anchor for the text box is in a table cell, the percentage value relates to the surrounding table box. If the anchor for the text box is in a text box, the percentage value relates to the surrounding text box. In other cases, the percentage values relate to the height of the page or window.

<define name="draw-text-box-attlist" combine="interleave">

<optional>

<attribute name="fo:min-height">

<choice>

<ref name="length"/>

<ref name="percent"/>

</choice>

</attribute>

</optional>

<optional>

<attribute name="fo:min-width">

<choice>

<ref name="length"/>

<ref name="percent"/>

</choice>

</attribute>

</optional>

</define>

#### Maximum Height and Width

If the width or height of a text box is specified as a minimum width or height (using the fo:min-width or fo:min-height attributes), then the fo:max-width and fo:max-height attributes specify a maximum width and height for the text box. When these maximum values are reached, the text box stops increasing in size. The attributes' value can be either a length or a percentage. If the anchor for the text box is in a table cell, the percentage value relates to the size of the surrounding table cell. If the anchor for the text box is in a text box, the percentage value relates to the size of the surrounding text box. In other cases, the percentage values relate to the width or height of the page or window.

<define name="draw-text-box-attlist" combine="interleave">

<optional>

<attribute name="fo:max-height">

<choice>

<ref name="length"/>

<ref name="percent"/>

</choice>

</attribute>

</optional>

<optional>

<attribute name="fo:max-width">

<choice>

<ref name="length"/>

<ref name="percent"/>

</choice>

</attribute>

</optional>

</define>

#### ID

A text box may have an ID. This ID can be used to reference the text box from other elements.

<define name="draw-text-box-attlist" combine="interleave">

<optional>

<ref name="text-id"/>

</optional>

</define>

### Image

The <draw:image> element represents an image. An image can be either:

* Contained in a document as a link to an external resource

or

* Embedded in a document

This element can be an [XLink], in which case the element contains some attributes with fixed values that describe the link semantics.

While the image data may have an arbitrary format, it is recommended that vector graphics are stored in the [SVG] format and bitmap graphics in the [PNG] format.

<define name="draw-image">

<element name="draw:image">

<ref name="draw-image-attlist"/>

<choice>

<ref name="common-draw-data-attlist"/>

<ref name="office-binary-data"/>

</choice>

<ref name="draw-text"/>

</element>

</define>

The attributes that may be associated with the <draw:image> element are:

* Image data
* Filter name

Like most other drawing shapes, image drawing shapes may have text content. It is displayed in addition to the image data.

#### Image Data

The image data can be stored in one of the following ways:

* The image data is contained in an external file. Use the xlink:href and associated attributes described below to link to the external file.
* The image data is contained in the <draw:image> element. The <draw:image> then element contains an <office:binary-data> element that contains the image data in BASE64 encoding (as defined in [RFC2045]). In this situation the xlink:href attribute is not required.

<define name="common-draw-data-attlist" combine="interleave">

<group>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<choice>

<value>simple</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="xlink:show" a:defaultValue="embed">

<choice>

<value>embed</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onLoad">

<choice>

<value>onLoad</value>

</choice>

</attribute>

</optional>

</group>

</define>

<define name="office-binary-data">

<element name="office:binary-data">

<ref name="base64Binary"/>

</element>

</define>

#### Filter Name

If required, the draw:filter-name attribute can represent the filter name of the image. This attribute contains the internal filter name that the office application software used to load the graphic.

<define name="draw-image-attlist" combine="interleave">

<optional>

<attribute name="draw:filter-name">

<ref name="string"/>

</attribute>

</optional>

</define>

### Objects

A document in OpenDocument format can contain two types of objects, as follows:

* Objects that have an OpenDocument or other XML representation. Objects that have an OpenDocument representation are:
  + Formulas (represented as [MathML])
  + Charts
  + Spreadsheets
  + Text documents
  + Drawings
  + Presentations
* Objects that do not have an XML representation. These objects only have a binary representation, An example for this kind of objects OLE objects (see [OLE]).

The <draw:object> element represents objects that have a XML representation. The <draw:object-ole> element represents objects that only have a binary representation.

<define name="draw-object">

<element name="draw:object">

<ref name="draw-object-attlist"/>

<choice>

<ref name="common-draw-data-attlist"/>

<ref name="office-document"/>

<ref name="math-math"/>

</choice>

</element>

</define>

<define name="draw-object-ole">

<element name="draw:object-ole">

<ref name="draw-object-ole-attlist"/>

<choice>

<ref name="common-draw-data-attlist"/>

<ref name="office-binary-data"/>

</choice>

</element>

</define>

The attributes that may be associated with the <draw:object> and <draw:object-ole> elements are:

* Object data
* Table Change Notifications
* Class Id

Objects do not support transformations as described in section 9.2.15.

#### Object Data

The object data can be called in one of the following ways:

* The xlink:href attribute links to the object representation, as follows:
  + For objects that have an XML representation, the link references the sub package of the object. The object is contained within this sub page exactly as it would as it is a document of its own.
  + For objects that do not have an XML representation, the link references a sub stream of the package that contains the binary representation of the object.

Application that support objects should support linking to objects that are contained within the same package. They may also support linking to object located outside the package.

* The object data is contained in the <draw:object> or <draw:object-ole> element, as follows:
  + The <draw:object> element contains the XML representation of the object, for example, an <office:document> or a <math:math> element.
  + The <draw:object-ole> element contains an <office:binary-data> element, which contains the binary data for the object in BASE64 encoding.

In these situations, the xlink:href attributes are not required.

The xlink:href attribute is described in section 9.3.2.

It is recommended to include an image representation of the object into the frame in addition to the object itself.

#### Notification on Table Change

Some objects, especially charts, may require a notification when a table in the document changes. To enable this notification, use the draw:notify-on-change-of-table attribute, which contains the name of the table. This attribute can be associated with the <draw:object> element.

<define name="draw-object-attlist" combine="interleave">

<optional>

<attribute name="draw:notify-on-update-of-ranges">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Class Id

If the embedded object is an OLE object, the draw:class-id attribute optionally contains the OLE class id of the object (see also [OLE]).

<define name="draw-object-ole-attlist" combine="interleave">

<optional>

<attribute name="draw:class-id"/>

</optional>

</define>

### Applet

An applet is a small Java-based program that is embedded in a document. The <draw:applet> element is based on the <applet> tag in [HTML4]. This element must contain either the draw:code or draw:object attribute.

<define name="draw-applet">

<element name="draw:applet">

<ref name="draw-applet-attlist"/>

<optional>

<ref name="common-draw-data-attlist"/>

</optional>

<zeroOrMore>

<ref name="draw-param"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <draw:applet> element are:

* Codebase
* Code
* Object
* Archive
* Mayscript

The only element that may be contained in the <draw:applet> element is:

* Parameter (see section 9.3.6)

Applets do not support transformations as described in section 9.2.15.

#### Codebase

The codebase specifies the base IRI for the applet. If this attribute is not specified, then it defaults the same base IRI as for the current document. The codebase is represented be the [XLink] attributes xlink:href, xlink:type, xlink:show, and xlink:actuate. The xlink:href attribute is described in section 9.3.2.

#### Code

The draw:code attribute specifies one of the following:

* The name of the class file that contains the compiled applet subclass.
* The path to the class, including the class file itself.

Either this attribute or the draw:object attribute is required. The value of this attribute is interpreted in relation to the codebase for the applet.

<define name="draw-applet-attlist" combine="interleave">

<optional>

<attribute name="draw:code"/>

</optional>

</define>

#### Object

The draw:object attribute specifies a resource that contains a serialized representation of the state of the applet. The serialized data contains the class name of the applet but not the implementation. The value of this attribute is interpreted in relation to the codebase for the applet.

<define name="draw-applet-attlist" combine="interleave">

<optional>

<attribute name="draw:object"/>

</optional>

</define>

#### Archive

The draw:archive attribute specifies a comma-separated list of URLs for archives that contain classes and other resources that are preloaded.

<define name="draw-applet-attlist" combine="interleave">

<optional>

<attribute name="draw:archive"/>

</optional>

</define>

#### Mayscript

The draw:mayscript attribute specifies whether or not the applet can be scripted.

<define name="draw-applet-attlist" combine="interleave">

<optional>

<attribute name="draw:may-script" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Plugins

A plugin is a binary object that is plugged into a document to represent a media-type that usually is not handled natively by office application software. Plugins are represented by the <draw:plugin> element

<define name="draw-plugin">

<element name="draw:plugin">

<ref name="draw-plugin-attlist"/>

<ref name="common-draw-data-attlist"/>

<zeroOrMore>

<ref name="draw-param"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <draw:plugin> element are:

* Mime type
* Source

The only element that may be contained in the <draw:plugin> element is:

* Parameter (see section 9.3.6)

Plugins do not support transformations as described in section 9.2.15.

#### Mime type

The draw:mimetype attribute specifies the MIME type to which this plugin should be registered.

<define name="draw-plugin-attlist" combine="interleave">

<optional>

<attribute name="draw:mime-type"/>

</optional>

</define>

#### Source

The [XLink] attributes xlink:href, xlink:type, xlink:show, and xlink:actuate specify the source of the plugin. The xlink:href attribute is described in section 9.3.2.

### Parameters

The <draw:param> element contains parameters that are passed to an applet or plugin when they are initialized.

<define name="draw-param">

<element name="draw:param">

<ref name="draw-param-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the <draw:param> element are:

* Name
* Value

#### Name

The draw:name attribute specifies the name of a runtime parameter.

<define name="draw-param-attlist" combine="interleave">

<optional>

<attribute name="draw:name"/>

</optional>

</define>

#### Value

The draw:value attribute specifies the value of the runtime parameter specified by the name.

<define name="draw-param-attlist" combine="interleave">

<optional>

<attribute name="draw:value"/>

</optional>

</define>

### Floating Frame

A floating frame is a frame embedded in a document, which may contain, for example, a text document or spreadsheet. A floating frame is represented by the <draw:floating-frame> element.

<define name="draw-floating-frame">

<element name="draw:floating-frame">

<ref name="draw-floating-frame-attlist"/>

<ref name="common-draw-data-attlist"/>

</element>

</define>

The attributes that may be associated with the <draw:floating-frame> element are:

* Source
* Frame Name

Floating frames do not support transformations as described in section 9.2.15.

#### Source

The [XLink] attributes xlink:href, xlink:type, xlink:show, and xlink:actuate specify the source of the floating frame. The xlink:href attribute is described in section 9.3.2.

#### Frame Name

The draw:frame-name specifies the name of the frame. This name can be used as target from within hyperlinks.

<define name="draw-floating-frame-attlist" combine="interleave">

<optional>

<attribute name="draw:frame-name">

<ref name="string"/>

</attribute>

</optional>

</define>

### Contour

The <draw:contour-polygon> and <draw:contour-path> elements may be contained in the following elements:

* <draw:image>
* <draw:object>
* <draw:object-ole>
* <draw:applet>
* <draw:plugin>
* <draw:floating-frame>

These elements describe the contour of an image or object.

<define name="draw-contour-polygon">

<element name="draw:contour-polygon">

<ref name="common-contour-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-viewbox-attlist"/>

<ref name="common-draw-points-attlist"/>

<empty/>

</element>

</define>

<define name="draw-contour-path">

<element name="draw:contour-path">

<ref name="common-contour-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-viewbox-attlist"/>

<ref name="common-draw-path-data-attlist"/>

<empty/>

</element>

</define>

The elements are similar to the <draw:polygon> (see section 9.2.4) and <draw:path> (see section 9.2.6) elements, except that they specify a contour rather than a drawing shape. The attributes they support are the ones for the size, the viewbox, the points (contour polygon only) and the path (contour path only).

For the svg:width and svg:height attributes of the <draw:contour-polygon> and <draw:contour-path> elements, applications should support pixel lengths (i.e., 20px) in addition to traditional lengths like 2cm.

#### Recreate on Edit

The draw:recreate-on-edit attribute specifies if the contour of the image or object should be recreated automatically when the image or object is edited.

<define name="common-contour-attlist" combine="interleave">

<attribute name="draw:recreate-on-edit">

<ref name="boolean"/>

</attribute>

</define>

### Hyperlinks

Frames may behave like hyperlinks. Such hyperlinks are represented by the <draw:a> element, where. the element's content is the frame that should be the source of the link.

This element is an [XLink] and has some attributes with fixed values and describe the semantics of the link.

<define name="draw-a">

<element name="draw:a">

<ref name="draw-a-attlist"/>

<ref name="draw-frame"/>

</element>

</define>

The attributes that may be associated with the <draw:a> element are:

* Link location
* Link target frame
* Name
* Title
* Server side image map

#### Link Location

The xlink:href attribute specifies the target location of the link.

<define name="draw-a-attlist" combine="interleave">

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onRequest">

<choice>

<value>onRequest</value>

</choice>

</attribute>

</optional>

</define>

#### Link Target Frame

The office:target-frame attribute specifies the target frame of the link.

This attribute can have one of the following values:

* \_self : The referenced document replaces the content of the current frame.
* \_blank : The referenced document is displayed in a new frame.
* \_parent : The referenced document is displayed in the parent frame of the current frame.
* \_top : The referenced document is displayed in the topmost frame, that is the frame that contains the current frame as a child or descendent but is not contained within another frame.
* A frame name : The referenced document is displayed in the named frame. If the named frame does not exist, a new frame with that name is created.

To conform with the [XLink] specification, an additional xlink:show attribute is attached to the <draw:a> element. If the value of the this attribute is \_blank, the xlink:show attribute value is new. If the value of the this attribute is any of the other value options, the value of the xlink:show attribute is replace.

<define name="draw-a-attlist" combine="interleave">

<optional>

<attribute name="office:target-frame-name">

<ref name="targetFrameName"/>

</attribute>

</optional>

<optional>

<attribute name="xlink:show">

<choice>

<value>new</value>

<value>replace</value>

</choice>

</attribute>

</optional>

</define>

#### Name

A hyperlink can have a name, but it is not essential. The office:name attribute specifies the name of the link. The name can serve as a target for other hyperlinks. The name does not have to be unique.

This attribute is specified for compatibility with [HTML4] only, where an <a> element may serve as a link source and target simultaneously. We strongly recommend that this attribute not be used for any purpose other than to represent links that originally came from a HTML document.

<define name="draw-a-attlist" combine="interleave">

<optional>

<attribute name="office:name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Title

The office:title attribute specifies a short accessible description for hint text.

See appendix E for guidelines how to use this attribute.

<define name="draw-a-attlist" combine="interleave">

<optional>

<attribute name="office:title">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Server Side Image Map

A link can be a server side image map. If the office:server-map attribute is present, the mouse coordinates of the click position of the graphic shape are appended to the IRI of the link. The coordinates may be used by the server to determine which link to activate within the image map.

<define name="draw-a-attlist" combine="interleave">

<optional>

<attribute name="office:server-map" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Client Side Image Maps

An client side image map is a collection of hyperlinks that are associated with graphic elements. The image map is a sequence of image map elements. Each image map element associates a hyperlink with an area. The area can be one of the following shapes:

* Rectangular
* Circular
* Polygonal

The <draw:image-map> element represents an image map.

<define name="draw-image-map">

<element name="draw:image-map">

<zeroOrMore>

<choice>

<ref name="draw-area-rectangle"/>

<ref name="draw-area-circle"/>

<ref name="draw-area-polygon"/>

</choice>

</zeroOrMore>

</element>

</define>

The <draw:image-map> element can contain three types of image map elements, which represent the three types of image map areas as follows:

* Rectangular image map elements
* Circular image map elements
* Polygonal image map elements

Image map elements are described in terms of absolute positions. When loading the XML file, the office application must map the image map onto its associated graphical element, for example an image, in its original size. The application then must scale the image map to match the current size of the image, but in the file format the image is always saved in its unscaled version, matching the dimensions of the unscaled image.

#### Rectangular Image Map Areas

The <draw:area-rectangle> element describes a rectangular image map area by an x, y position (svg:x and svg:y attributes) as well as a width and the height (svg:width and svg:height attributes). These attributes are required. In addition to this, the attributes described in section 9.3.10: are optionally supported.

<define name="draw-area-rectangle">

<element name="draw:area-rectangle">

<ref name="common-draw-area-attlist"/>

<attribute name="svg:x">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:y">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:width">

<ref name="length"/>

</attribute>

<attribute name="svg:height">

<ref name="length"/>

</attribute>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

</element>

</define>

#### Circular Image Map Areas

The <draw:area-circle> element describes a circular image map area. The additional attributes for circular image maps are described below in the common attributes section.

The required attributes svg:cx and svg:cy specify the center point of the circle. The required svg:r attribute specifies the radius of the circle.

The attributes described in section 9.3.10: are optional.

<define name="draw-area-circle">

<element name="draw:area-circle">

<ref name="common-draw-area-attlist"/>

<attribute name="svg:cx">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:cy">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:r">

<ref name="length"/>

</attribute>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

</element>

</define>

#### Polygonal Image Map Areas

The <draw:area-polygon> element describes a polygonal image map area. A polygonal image map area is comprised of the following components:

* A bounding box.  
  The bounding box, which is represented in the same way as a rectangular image map area using the svg:x, svg:y, svg:width, and svg:height attributes, establishes the reference frame for the view box and the polygon point sequence. The reference frame enables the coordinates to be translated into absolute coordinates.
* A view box.  
  The view box attribute svg:viewBox establishes a coordinate system for the point sequence. The view box obviates the need to record every point of the point sequence as absolute coordinates with length and unit of measurement.
* A sequence of points in view box coordinates in the svg:points attribute.

For more information about how to represent polygons, see section 9.2.4.

The attributes above are required. The attributes described in section 9.3.10: are optional.

<define name="draw-area-polygon">

<element name="draw:area-polygon">

<ref name="common-draw-area-attlist"/>

<attribute name="svg:x">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:y">

<ref name="coordinate"/>

</attribute>

<attribute name="svg:width">

<ref name="length"/>

</attribute>

<attribute name="svg:height">

<ref name="length"/>

</attribute>

<ref name="common-draw-viewbox-attlist"/>

<ref name="common-draw-points-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

</element>

</define>

Example: Polygonal image map area

The element shown in the following example defines a triangle that is located in the middle of a 2cm by 2cm image. The bounding box covers an area of 2cm by 1.5cm. One view box unit corresponds to 0.01mm.

<draw:area-polygon ...   
 svg:x="0" svg:y="0" svg:width="2.0cm" svg:height="2.0cm"  
 svg:viewBox="0 0 2000 2000"  
 svg:points="400,1500 1600,1500 1000,400"/>

#### Common Image Map Attributes and Elements

In addition to the shape attributes, each image map element can contain the following information:

* Link, including a IRI and link target frame.
* Name.
* Inactive flag.
* Title (short accessible name). Use the <svg:title> child element as described in section 9.2.20.
* Long description (in support of accessibility). Use the <svg:desc> child element as described in section 9.2.20.
* Events associated with the area. Use the <office:event-listeners> child element as described in section 12.4.

Other attributes of the image maps are taken from the HTML image map representation.

Each image map element identifies a hyperlink and uses the [XLink] href, type, and show attributes, and the office:target-frame-name attribute to describe the link.

<define name="common-draw-area-attlist" combine="interleave">

<optional>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

</optional>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<choice>

<value>simple</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="office:target-frame-name">

<ref name="targetFrameName"/>

</attribute>

</optional>

<optional>

<attribute name="xlink:show">

<choice>

<value>new</value>

<value>replace</value>

</choice>

</attribute>

</optional>

</define>

The office:name attribute assigns a name to each image map element.

<define name="common-draw-area-attlist" combine="interleave">

<optional>

<attribute name="office:name">

<ref name="string"/>

</attribute>

</optional>

</define>

The draw:nohref attribute declares that the image map element and the associated area is inactive. The IRI that is contained in the image map element is not used.

<define name="common-draw-area-attlist" combine="interleave">

<optional>

<attribute name="draw:nohref">

<choice>

<value>nohref</value>

</choice>

</attribute>

</optional>

</define>

## 3D Shapes

### Scene

The <dr3d:scene> element is the only element that can contain three-dimensional shapes. A scene is like a group, but it also defines the projection, lighting, and other render details for the shapes inside the scene.

<define name="dr3d-scene">

<element name="dr3d:scene">

<ref name="dr3d-scene-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-style-name-attlist"/>

<ref name="common-draw-z-index-attlist"/>

<ref name="common-draw-id-attlist"/>

<ref name="common-draw-layer-name-attlist"/>

<ref name="common-text-spreadsheet-shape-attlist"/>

<ref name="common-dr3d-transform-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<zeroOrMore>

<ref name="dr3d-light"/>

</zeroOrMore>

<zeroOrMore>

<ref name="shapes3d"/>

</zeroOrMore>

</element>

</define>

<define name="shapes3d">

<choice>

<ref name="dr3d-scene"/>

<ref name="dr3d-extrude"/>

<ref name="dr3d-sphere"/>

<ref name="dr3d-rotate"/>

<ref name="dr3d-cube"/>

</choice>

</define>

The attributes that may be associated with the <dr3d:scene> element are:

* Position, Size, Style, Layer, Z-Index, ID and Caption ID – see section 9.2.15
* Text anchor, table background, draw end position – see section 9.2.16
* Camera vectors
* Projection
* Distance
* Focal length
* Shadow slant
* Shade mode
* Ambient color
* Lighting mode

The elements that may be contained in the <dr3d:scene> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Light – see section 9.4.2.
* Scene – see section 9.4.1.
* Extrude – see section 9.4.5.
* Sphere – see section 9.4.4.
* Rotate – see section 9.4.6.
* Cube – see section 9.4.3.

#### Camera Vectors

The camera vectors define a viewing volume. The dr3d:vrp attribute specifies the origin, the dr3d:vpn attribute points towards the projected objects, and the dr3d:vup attribute defines the up vector.

<define name="dr3d-scene-attlist" combine="interleave">

<optional>

<attribute name="dr3d:vrp">

<ref name="vector3D"/>

</attribute>

</optional>

<optional>

<attribute name="dr3d:vpn">

<ref name="vector3D"/>

</attribute>

</optional>

<optional>

<attribute name="dr3d:vup">

<ref name="vector3D"/>

</attribute>

</optional>

</define>

#### Projection

The dr3d:projection attribute specifies the projection. The projection can be perspective or parallel. In perspective mode, objects become smaller in the distance.

<define name="dr3d-scene-attlist" combine="interleave">

<optional>

<attribute name="dr3d:projection">

<choice>

<value>parallel</value>

<value>perspective</value>

</choice>

</attribute>

</optional>

</define>

#### Distance

The dr3d:distance attribute specifies the distance between the camera and the object.

<define name="dr3d-scene-attlist" combine="interleave">

<optional>

<attribute name="dr3d:distance">

<ref name="length"/>

</attribute>

</optional>

</define>

#### Focal Length

The dr3d:focal-length attribute specifies the length of the focus for the virtual camera of this scene.

<define name="dr3d-scene-attlist" combine="interleave">

<optional>

<attribute name="dr3d:focal-length">

<ref name="length"/>

</attribute>

</optional>

</define>

#### Shadow Slant

The dr3d:shadow-slant attribute defines the angle from the three-dimensional scene to a virtual paper on which the shadow is cast.

<define name="dr3d-scene-attlist" combine="interleave">

<optional>

<attribute name="dr3d:shadow-slant">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

#### Shade Mode

The shade mode defines how the lighting is calculated for rendered surfaces

* flat: lighting is calculated by one surface normal.
* phong: lighting is calculated by interpolating the surface normals over the surface.
* gouraud: lighting is calculated by interpolating the color calculated with the surface normals at each edge.
* draft: surfaces are not lit and drawn as wireframe only.

<define name="dr3d-scene-attlist" combine="interleave">

<optional>

<attribute name="dr3d:shade-mode">

<choice>

<value>flat</value>

<value>phong</value>

<value>gouraud</value>

<value>draft</value>

</choice>

</attribute>

</optional>

</define>

#### Ambient Color

The dr3d:ambient-color attribute specifies the color for ambient light. Ambient light is that light that seems to come from all directions.

<define name="dr3d-scene-attlist" combine="interleave">

<optional>

<attribute name="dr3d:ambient-color">

<ref name="color"/>

</attribute>

</optional>

</define>

#### Lighting Mode

The attribute dr3d:lighting-mode enables or disables the use of lighting in the three-dimensional scene.

<define name="dr3d-scene-attlist" combine="interleave">

<optional>

<attribute name="dr3d:lighting-mode">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### 3D Transformation

The value of the dr3d:transform attribute is a list of transform definitions, which are applied in the order provided. The individual transform definitions are separated by whitespace. The available types of transform definitions include:

* matrix (<a> <b> <c> <d> <e> <f> <g> <h> <i> <j> <k> <l>), which specifies a transformation in the form of a transformation matrix of six values. matrix(a,b,c,d,e,f,g,h,i,j,k,l) is equivalent to applying the transformation matrix [a b c d e f g h i j k l].
* translate (<tx> <ty> <tz>), which specifies a translation by tx, ty and tz.
* scale (<sx> <sy> <sz>), which specifies a scale operation by sx, sy and sz.
* rotatex (<rotate-angle> ), which specifies a rotation by <rotate-angle> degrees along the x-axis.
* rotatey (<rotate-angle> ), which specifies a rotation by <rotate-angle> degrees along the y-axis.
* rotatez (<rotate-angle> ), which specifies a rotation by <rotate-angle> degrees along the y-axis.

<define name="common-dr3d-transform-attlist">

<optional>

<attribute name="dr3d:transform"/>

</optional>

</define>

### Light

The <dr3d:light> element represents a light inside a scene.

This element must be the first element contained in a <dr3d:scene> element. There may be several lights, but applications may only support a limited number per scene. A typical limitation are 8 lights per scene.

<define name="dr3d-light">

<element name="dr3d:light">

<ref name="dr3d-light-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the <dr3d:light> element are:

* Diffuse color
* Direction
* Enabled
* Specular

#### Diffuse Color

The dr3d:diffuse-color attribute specifies the base color that the light is emitting.

<define name="dr3d-light-attlist" combine="interleave">

<optional>

<attribute name="dr3d:diffuse-color">

<ref name="color"/>

</attribute>

</optional>

</define>

#### Direction

The dr3d:direction attribute specifies the direction in which the light is emitted.

<define name="dr3d-light-attlist" combine="interleave">

<attribute name="dr3d:direction">

<ref name="vector3D"/>

</attribute>

</define>

#### Enabled

The dr3d:enabled attribute specifies whether or not the light is enabled. If a light is not enabled, it does not emit any light.

<define name="dr3d-light-attlist" combine="interleave">

<optional>

<attribute name="dr3d:enabled">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Specular

The dr3d:specular attribute specifies whether or not the light causes a specular reflection on the objects. Applications may evaluate this attribute only for the first light in a scene.

<define name="dr3d-light-attlist" combine="interleave">

<optional>

<attribute name="dr3d:specular">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Cube

The <dr3d:cube> element represents a three-dimensional cube shape.

<define name="dr3d-cube">

<element name="dr3d:cube">

<ref name="dr3d-cube-attlist"/>

<ref name="common-draw-z-index-attlist"/>

<ref name="common-draw-id-attlist"/>

<ref name="common-draw-layer-name-attlist"/>

<ref name="common-draw-style-name-attlist"/>

<ref name="common-dr3d-transform-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the <dr3d:cube> element are:

* Style, Layer, Z-Index and ID – see section 9.2.15
* Minimum and Maximum Edge

#### Minimum and Maximum Edge

The attributes dr3d:min-edge and dr3d:max-edge specify the minimum and maximum edge of the cube in a 3D space.

<define name="dr3d-cube-attlist" combine="interleave">

<optional>

<attribute name="dr3d:min-edge">

<ref name="vector3D"/>

</attribute>

</optional>

<optional>

<attribute name="dr3d:max-edge">

<ref name="vector3D"/>

</attribute>

</optional>

</define>

### Sphere

The <dr3d:sphere> element represents a three-dimensional sphere shape.

<define name="dr3d-sphere">

<element name="dr3d:sphere">

<ref name="dr3d-sphere-attlist"/>

<ref name="common-draw-z-index-attlist"/>

<ref name="common-draw-id-attlist"/>

<ref name="common-draw-layer-name-attlist"/>

<ref name="common-draw-style-name-attlist"/>

<ref name="common-dr3d-transform-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the <dr3d:sphere> element are:

* Style, Layer, Z-Index, and ID – see section 9.2.15
* Center
* Size

#### Center

The dr3d:center attribute defines the center of the sphere in a three-dimensional space.

<define name="dr3d-sphere-attlist" combine="interleave">

<optional>

<attribute name="dr3d:center">

<ref name="vector3D"/>

</attribute>

</optional>

</define>

#### Size

The dr3d:size attribute defines the size of the sphere in a three-dimensional space.

<define name="dr3d-sphere-attlist" combine="interleave">

<optional>

<attribute name="dr3d:size">

<ref name="vector3D"/>

</attribute>

</optional>

</define>

### Extrude

The <dr3d:extrude> element represents a three-dimensional extrude based on a polygon.

<define name="dr3d-extrude">

<element name="dr3d:extrude">

<ref name="common-draw-path-data-attlist"/>

<ref name="common-draw-viewbox-attlist"/>

<ref name="common-draw-id-attlist"/>

<ref name="common-draw-z-index-attlist"/>

<ref name="common-draw-layer-name-attlist"/>

<ref name="common-draw-style-name-attlist"/>

<ref name="common-dr3d-transform-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the <dr3d:extrude> element are:

* Viewbox, Style, Layer, Z-Index, and ID – see section 9.2.15
* Path Data – see section 9.2.6

### Rotate

The <dr3d:rotate> element represents a three-dimensional rotation shape based on a polygon.

<define name="dr3d-rotate">

<element name="dr3d:rotate">

<ref name="common-draw-viewbox-attlist"/>

<ref name="common-draw-path-data-attlist"/>

<ref name="common-draw-z-index-attlist"/>

<ref name="common-draw-id-attlist"/>

<ref name="common-draw-layer-name-attlist"/>

<ref name="common-draw-style-name-attlist"/>

<ref name="common-dr3d-transform-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the <dr3d:rotate> element are:

* Viewbox, Style, Layer, Z-Index, and ID – see section 9.2.15
* Path Data – see section 9.2.6

## Custom Shape

A <draw:custom-shape> represents a shape that is capable of rendering complex figures. It is offering font work and extrusion functionality. A custom shape may have a geometry that influences its shape. This geometry may be visualized in office application user interfaces, for instance by displaying interaction handles, that provide a simple way to modify the the geometry.

<define name="draw-custom-shape">

<element name="draw:custom-shape">

<ref name="draw-custom-shape-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<ref name="common-draw-caption-id-attlist"/>

<optional>

<ref name="svg-title"/>

</optional>

<optional>

<ref name="svg-desc"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<ref name="draw-glue-point"/>

</zeroOrMore>

<ref name="draw-text"/>

<optional>

<ref name="draw-enhanced-geometry"/>

</optional>

</element>

</define>

The attributes that may be associated with the <draw:custom shape> element are:

* Position, Size, Style, Layer, Z-Index, ID, Caption ID and Transformation – see section 9.2.15.
* Text anchor, table background, draw end position – see section 9.2.16.
* Draw engine
* Draw data

The elements that may be contained in the <draw:custom-shape> element are:

* Title (short accessible name) – see section 9.2.20.
* Long description (in support of accessibility) – see section 9.2.20.
* Event listeners – see section 9.2.21.
* Glue points – see section 9.2.19.
* Text – see section 9.2.17.
* Enhanced geometry – see section 9.5.1,

#### Draw Engine

The optional draw:engine attribute specifies the name of a rendering engine that can be used to render the custom shape. The attribute's value is a namespaced token, meaning an identifier prefixed by an XML namespace prefix, just like any attribute or element name in this specification. The drawing engine may get its data either from the draw:data attribute, or it may evaluate the <draw:enhanced-geometry> child element.

If the draw:engine attribute is omitted, the office application's default enhanced custom shape rendering engine will be used. This engine gets its geometry data from the <draw:enhanced-geometry> element only.

<define name="draw-custom-shape-attlist" combine="interleave">

<optional>

<attribute name="draw:engine">

<ref name="namespacedToken"/>

</attribute>

</optional>

</define>

#### Draw Data

The draw:data attribute contains rendering engine specific data that describes the geometry of the custom shape. This attribute is only evaluated if a non default rendering engine is specified by the draw:engine attribute.

<define name="draw-custom-shape-attlist" combine="interleave">

<optional>

<attribute name="draw:data">

<ref name="string"/>

</attribute>

</optional>

</define>

### Enhanced Geometry

The <draw:enhanced-geometry> element contains the geometry for a <draw:custom-shape> element if its draw:engine attribute has been omitted.

<define name="draw-enhanced-geometry">

<element name="draw:enhanced-geometry">

<ref name="draw-enhanced-geometry-attlist"/>

<zeroOrMore>

<ref name="draw-equation"/>

</zeroOrMore>

<zeroOrMore>

<ref name="draw-handle"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <draw:enhanced-geometry> element are

* Extrusion Allowed
* Text Path Allowed
* Concentric Gradient Fill Allowed
* (see section 9.5.2)
* (see section 9.5.3)
* (see section 9.5.4)
* Enhanced Geometry - Equation (see section 9.5.5)
* (see section 9.5.6)

#### Type

The draw:type attribute contains the name of a shape type. This name can be used to offer specialized user interfaces for certain classes of shapes, like for arrows, smileys, etc.

The shape type is rendering engine dependent and does not influence the geometry of the shape. If the value of the draw:type attribute is non-primitive, then no shape type is available.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:type" a:defaultValue="non-primitive">

<ref name="custom-shape-type"/>

</attribute>

</optional>

</define>

<define name="custom-shape-type">

<choice>

<value>non-primitive</value>

<ref name="string"/>

</choice>

</define>

#### View Box

The svg:viewBox attribute establishes a user coordinate system inside the physical coordinate system of the shape specified by the position and size attributes. This user coordinate system is used by the <draw:enhanced-path> element.

The syntax for using this attribute is the same as the [SVG] syntax. The value of the attribute are four numbers separated by white spaces, which define the left, top, right, and bottom dimensions of the user coordinate system.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="svg:viewBox">

<list>

<ref name="integer"/>

<ref name="integer"/>

<ref name="integer"/>

<ref name="integer"/>

</list>

</attribute>

</optional>

</define>

#### Mirror

The draw:mirror-vertical and draw:mirror-horizontal attributes specify if the geometry of the shape is to be mirrored.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:mirror-vertical" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="draw:mirror-horizontal" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Text Rotate Angle

The draw:text-rotate-angle attribute specifies the angle by which the text within the custom shape is rotated in addition to the rotation included in the shape's draw:transform attribute.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:text-rotate-angle" a:defaultValue="0">

<ref name="double"/>

</attribute>

</optional>

</define>

#### Extrusion Allowed

The draw:extrusion-allowed attribute specifies whether the shape is capable to be rendered as extrusion object.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-allowed" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Text Path Allowed

The draw:text-path-allowed attribute specifies if the shape is capable of being rendered as Fontwork object. The text of a Fontwork object is distinguished from normal text objects by being able to render text along or between lines that are specified by the draw:enhanced-path attribute. Fontwork objects are capable to support standard graphic attributes such as fill, shadow and or line styles.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:text-path-allowed" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Concentric Gradient Fill Allowed

The draw:concentric-gradient-fill-allowed attribute specifies if the shape is capable being rendered with a concentric gradient that uses the custom shape path.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:concentric-gradient-fill-allowed"

a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Enhanced Geometry - Extrusion Attributes

#### Extrusion

The draw:extrusion attribute determines if an extrusion is displayed.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Extrusion Brightness

The draw:extrusion-brightness attribute specifies the brightness of a scene.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-brightness" a:defaultValue="33%">

<ref name="percent"/>

</attribute>

</optional>

</define>

#### Extrusion Depth

The draw:extrusion-depth attribute specifies the depth of the extrusion. It takes two space separated values. The first value specifies the depth of the extrusion, the second value specifies the fraction of the extrusion that lies before the shape. It must be in the range [0,1]. A value of 0 is default.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-depth" a:defaultValue="36pt 0">

<list>

<ref name="length"/>

<ref name="double"/>

</list>

</attribute>

</optional>

</define>

#### Extrusion Diffusion

The amount of diffusion reflected by the shape is specified by the draw:extrusion-diffusion attribute.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-diffusion" a:defaultValue="0%">

<ref name="percent"/>

</attribute>

</optional>

</define>

#### Extrusion Number Of Line Segments

The draw:extrusion-number-of-line-segments attribute specifies the number of line segments that should be used to display curved surfaces. The higher the number the more line segments are used.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-number-of-line-segments"

a:defaultValue="30">

<ref name="integer"/>

</attribute>

</optional>

</define>

#### Extrusion Light Face

The draw:extrusion-light-face attribute specifies if the front face of the extrusion responds to lightning changes.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-light-face" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Extrusion First Light Harsh

The draw:extrusion-first-light-harsh attribute specifies if the primary light is harsh.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-first-light-harsh"

a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Extrusion Second Light Harsh

The draw:extrusion-second-light-harsh attribute specifies if the secondary light is harsh.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-second-light-harsh"

a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Extrusion First Light Level

The draw:extrusion-first-light-level attribute specifies the intensity for the first light.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-first-light-level"

a:defaultValue="66%">

<ref name="percent"/>

</attribute>

</optional>

</define>

#### Extrusion Second Light Level

The draw:extrusion-second-light-level attribute specifies the intensity for the second light.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-second-light-level"

a:defaultValue="66%">

<ref name="percent"/>

</attribute>

</optional>

</define>

#### Extrusion First Light Direction

The draw:extrusion-first-light-direction attribute specifies the direction of the first light.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-first-light-direction"

a:defaultValue="(5 0 1)">

<ref name="vector3D"/>

</attribute>

</optional>

</define>

#### Extrusion Second Light Direction

The draw:extrusion-second-light-direction attribute specifies the direction of the second light.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-second-light-direction"

a:defaultValue="(-5 0 1)">

<ref name="vector3D"/>

</attribute>

</optional>

</define>

#### Extrusion Metal

The draw:extrusion-metal attribute specifies if the surface of the extrusion object looks like metal.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-metal" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Extrusion Shade Mode

The dr3d:shade-mode attribute defines how the lighting is calculated for rendered surfaces

* flat: lighting is calculated by one surface normal.
* phong: lighting is calculated by interpolating the surface normals over the surface.
* gouraud: lighting is calculated by interpolating the color calculated with the surface normals at each edge.
* draft: surfaces are not lit and drawn as wireframe only.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="dr3d:shade-mode" a:defaultValue="flat">

<choice>

<value>flat</value>

<value>phong</value>

<value>gouraud</value>

<value>draft</value>

</choice>

</attribute>

</optional>

</define>

#### Extrusion Rotation Angle

The first value of the draw:extrusion-rotation-angle specifies the rotation about the x-axis. The second value of the draw:extrusion-rotation-angle specifies the rotation about the y-axis. The rotation about the z-axis is specified by the rotate angle of the draw:transform attribute.

The order of the rotation is: z-axis, y-axis and then x-axis.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-rotation-angle" a:defaultValue="0 0">

<list>

<ref name="double"/>

<ref name="double"/>

</list>

</attribute>

</optional>

</define>

#### Extrusion Rotation Center

The draw:extrusion-rotation-center attribute specifies the position of the rotation center in terms of shape size fractions, if it is omitted then the geometrical center of the shape is used.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-rotation-center">

<ref name="vector3D"/>

</attribute>

</optional>

</define>

#### Extrusion Shininess

The draw:extrusion-shininess attribute specifies the shininess of a mirror.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-shininess" a:defaultValue="50%">

<ref name="percent"/>

</attribute>

</optional>

</define>

#### Extrusion Skew

The draw:extrusion-skew attribute specifies the skew amount and skew angle of an extrusion. Skew settings are only applied if the attribute dr3d:projection has the value parallel.

The first parameter represents the skew amount in percent, the second parameter specifies the skew angle.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-skew" a:defaultValue="50 45">

<list>

<ref name="double"/>

<ref name="double"/>

</list>

</attribute>

</optional>

</define>

#### Extrusion Specularity

The draw:extrusion-specularity attribute specifies the specularity of an extrusion object.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-specularity" a:defaultValue="0%">

<ref name="percent"/>

</attribute>

</optional>

</define>

#### Extrusion Projection Mode

The dr3d:projection attribute specifies if the projection mode is perspective or parallel.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="dr3d:projection" a:defaultValue="parallel">

<choice>

<value>parallel</value>

<value>perspective</value>

</choice>

</attribute>

</optional>

</define>

#### Extrusion Viewpoint

The draw:extrusion-viewpoint attribute specifies the viewpoint of the observer as an 3D point. The attribute's value syntax is similar to vector3D, solely a unit is following each parameter. An example for a 3D point is: “(1cm 1cm 0m)”.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-viewpoint"

a:defaultValue="3.5cm -3.5cm 25cm">

<ref name="point3D"/>

</attribute>

</optional>

</define>

<define name="point3D">

<data type="string"/>

</define>

#### Extrusion Origin

The draw:extrusion-origin attributes specifies the origin within the bounding box of the shape in terms of the shape size fractions.

The first parameter represents the horizontal origin, a value of -0.5 represents the left side of the shape, a value of 0 represents the center of the shape, a value of 0.5 represents the right side of the shape.

The second parameter represents the vertical origin, a value of -0.5 represents the top side of the shape, a value of 0 represents the center of the shape, a value of 0.5 represents the bottom side of the shape.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-origin" a:defaultValue="0.5 -0.5">

<list>

<ref name="double"/>

<ref name="double"/>

</list>

</attribute>

</optional>

</define>

#### Extrusion Color

The draw:extrusion-color attribute specifies if an extrusion color is used. The extrusion color is then defined by the draw:secondary-fill-color attribute specified in the custom shape's graphic style.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:extrusion-color" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Enhanced Geometry - Path Attributes

#### Enhanced Path

The draw:enhanced-path attribute specifies a path similar to the svg:d attribute of the <svg:path> element. Instructions such as moveto, lineto, arcto and other instructions together with its parameter are describing the geometry of a shape which can be filled and or stroked. Relative commands are not supported.

The syntax of draw:enhanced-path attribute is as follows:

* Instructions are expressed as one character (e.g., a moveto is expressed as an M).
* A prefix notation is being used, that means that each command is followed by its parameter.
* Superfluous white space and separators such as commas can be eliminated. (e.g., “M 10 10 L 20 20 L 30 20” can also be written: “M10 10L20 20L30 20”
* If the command is repeated multiple times, only the first command is required. (e.g., “M 10 10 L 20 20 L 30 20” can also be expressed as followed “M 10 10 L 20 20 30 20”
* Floats can be used, therefore the only allowable decimal point is a dot (“.”)

The above mentioned rules are the same as specified for the <svg:path> element.

A parameter can also have one of the following enhancements:

* A “?” is used to mark the beginning of a formula name. The result of the element's draw:formula attribute is used as parameter value in this case.
* If “$” is preceding a integer value, the value is indexing a draw:modifiers attribute. The corresponding modifier value is used as parameter value then.

Following notation is used in the table below:

* (): grouping of parameters
* +: 1 or more of the given parameter(s) is required

**Example** for a custom-shape that uses the draw:enhanced-path to describe a pie-chart whose top right quarter segment is taken out:

<draw:custom-shape

svg:width="10cm" svg:height="10cm" svg:x="0cm" svg:y="0cm">

<draw:enhanced-geometry svg:viewBox="0 0 10 10"

draw:enhanced-path="V 0 0 10 10 10 5 5 0 L 5 5 Z N">

</draw:enhanced-geometry>

</draw:custom-shape>

The following commands are supported:

| Command | Name | Parameters | Description |
| --- | --- | --- | --- |
| M | moveto | (x y) + | Start a new sub-path at the given (x,y) coordinate. If a moveto is followed by multiple pairs of coordinates, they are treated as lineto. |
| L | lineto | (x y) + | Draws a line from the current point to (x, y). If multiple coordinate pairs are following, they are all interpreted as lineto. |
| C | curveto | (x1 y1 x2 y2 x y) + | Draws a cubic Bézier curve from the current point to (x,y) using (x1,y1) as the control point at the beginning of the curve and (x2,y2) as the control point at the end of the curve. |
| Z | closepath | (none) | Close the current sub-path by drawing a straight line from the current point to current sub-path's initial point. |
| N | endpath | (none) | Ends the current set of sub-paths. The sub-paths will be filled by using the “even-odd” filling rule. Other following subpaths will be filled independently. |
| F | nofill | (none) | Specifies that the current set of sub-paths won't be filled. |
| S | nostroke | (none) | Specifies that the current set of sub-paths won't be stroked. |
| T | angle­ellipseto | (x y w h t0 t1) + | Draws a segment of an ellipse. The ellipse is specified by the center(x, y), the size(w, h) and the start-angle t0 and end-angle t1. |
| U | angle­ellipse | (x y w h t0 t1) + | The same as the “T” command, except that a implied moveto to the starting point is done. |
| A | arcto | (x1 y1 x2 y2 x3 y3 x y) + | (x1, y1) and (x2, y2) is defining the bounding box of a ellipse. A line is then drawn from the current point to the start angle of the arc that is specified by the radial vector of point (x3, y3) and then counter clockwise to the end-angle that is specified by point (x4, y4). |
| B | arc | (x1 y1 x2 y2 x3 y3 x y) + | The same as the “A” command, except that a implied moveto to the starting point is done. |
| W | clockwise­arcto | (x1 y1 x2 y2 x3 y3 x y) + | The same as the “A” command except, that the arc is drawn clockwise. |
| V | clockwise­arc | (x1 y1 x2 y2 x3 y3 x y)+ | The same as the “A” command, except that a implied moveto to the starting point is done and the arc is drawn clockwise. |
| X | elliptical­quatrantx | (x y) + | Draws a quarter ellipse, whose initial segment is tangential to the x-axis, is drawn from the current point to (x, y). |
| Y | elliptical­quadranty | (x y) + | Draws a quarter ellipse, whose initial segment is tangential to the y-axis, is drawn from the current point to (x, y). |
| Q | quadratic­curveto | (x1 y1 x y)+ | Draws a quadratic Bézier curve from the current point to (x, y) using (x1, y1) as the control point. (x, y) becomes the new current point at the end of the command. |

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:enhanced-path">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Path Stretchpoint

The draw:path-stretchpoint-x and draw:path-stretchpoint-y attributes specifies the stretchpoint of a shape.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:path-stretchpoint-x" a:defaultValue="0">

<ref name="double"/>

</attribute>

</optional>

<optional>

<attribute name="draw:path-stretchpoint-y" a:defaultValue="0">

<ref name="double"/>

</attribute>

</optional>

</define>

#### Text Areas

The draw:text-areas attribute specifies a list of text areas. The text area is used to position and align the text. If no text area is omitted, the area of the shape itself is used. If a second text area is available it is used for vertical text.

An area consists of four parameters:

The first parameter specifies the left side of the text area.

The second parameter specifies the top side of the text area.

The third parameter specifies the right side of the text area.

The fourth parameter specifies the bottom side of the text area.

A parameter can also have one of the following enhancements:

* A “?” is used to mark the beginning of a formula name. The result of the element's draw:formula attribute is used as parameter value in this case.
* If “$” is preceding a integer value, the value is a indexing a draw:modifiers attribute. The corresponding modifier value is used as parameter value then.

A example of the draw:text-areas attribute that defines two text areas, including modifier and equation usage, would be: draw:text-areas=”0 0 100 100 ?Formula1 $1 200 200”

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:text-areas">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Glue Points

The draw:glue-points attribute specifies a list of object defined glue points. In contradiction to the user defined glue points which are defined by the <draw:glue-point> sub-element, the object defined glue point can make use of equations and modifiers.

The first parameter specifies the horizontal position of the glue point.

The second parameter specifies the vertical position of the glue point.

Each parameter can be a float, or it can also have one of the following enhancements:

* A “?” is used to mark the beginning of a formula name. The result of the element's draw:formula attribute is used as parameter value in this case.
* If “$” is preceding a integer value, the value is a indexing a draw:modifiers attribute. The corresponding modifier value is used as parameter value then.

A example of the draw:glue-points attribute that defines two glue points, including modifier and equation usage, would be: draw:glue-points=”0 ?Formula1 100 $1”

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:glue-points">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Glue Point Type

The draw:glue-point-type attribute specifies the glue-point type. If the draw:glue-points attribute is also available this attribute is ignored.

* none: there are no special object glue points.
* segments: a connector will connect with each point of the draw:enhanced-path attribute
* rectangle: the middle of each side of the shape bound rectangle specifies a object specific glue point

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:glue-point-type" a:defaultValue="none">

<choice>

<value>none</value>

<value>segments</value>

<value>rectangle</value>

</choice>

</attribute>

</optional>

</define>

#### Glue Point Leaving Directions

The draw:glue-point-leaving-directions attribute is containing a comma separated list of angles in grad. The angle can be a float value. The position in the list is the same as the to be referenced glue-point of the draw:glue-points attribute.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:glue-point-leaving-directions"/>

</optional>

</define>

### Enhanced Geometry - Text Path Attributes

#### Text Path

The draw:text-path attribute specifies if text is displayed on a text path.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:text-path" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Text Path Mode

The draw:text-path-mode attribute specifies how the text is drawn.

* normal: the text is drawn along the path without scaling.
* path: the text is fit to the path.
* shape: the text is fit to the bounding box of the shape.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:text-path-mode" a:defaultValue="normal">

<choice>

<value>normal</value>

<value>path</value>

<value>shape</value>

</choice>

</attribute>

</optional>

</define>

#### Text Path Scale

The draw:text-path-scale attribute specifies the scaling of the text path.

* path: The text scaling is determined by the length of the path from the draw:enhanced-path attribute.
* shape: The text scaling is determined by the width of a shape.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:text-path-scale" a:defaultValue="path">

<choice>

<value>path</value>

<value>shape</value>

</choice>

</attribute>

</optional>

</define>

#### Text Path Same Letter Heights

The draw:text-path-same-letter-heights attribute specifies if all letters in the custom shape will have the same height.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:text-path-same-letter-heights"

a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Modifiers

The draw:modifiers attribute contains list of modifier values. The modifier can be a float value. In the majority of cases, the draw:modifiers attribute is being used by the draw:handle-position attribute to store the handle position.

<define name="draw-enhanced-geometry-attlist" combine="interleave">

<optional>

<attribute name="draw:modifiers">

<ref name="string"/>

</attribute>

</optional>

</define>

### Enhanced Geometry – Equation

#### Equation

The <draw:equation> element can be referenced by handles, text areas, glue points and enhanced paths to calculate values which are dependent to modifier values. Due to the fact that modifier values may changed by interaction it is a convenient way to integrate dynamic values into the shape geometry.

<define name="draw-equation">

<element name="draw:equation">

<ref name="draw-equation-attlist"/>

<empty/>

</element>

</define>

#### Name

The draw:name attribute specifies the name of the equation. The name is not allowed to include spaces.

<define name="draw-equation-attlist" combine="interleave">

<optional>

<attribute name="draw:name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Formula

The draw:formula attribute specifies an equation that should be used to evaluate a value. A formula can make use of other formulas or modifier values by function and or modifier reference.

number\_digit = '0'|'1'|'2'|'3'|'4'|'5'|'6'|'7'|'8'|'9'

number = number number\_digit | number\_digit

identifier = 'pi'|'left'|'top'|'right'|'bottom'|'xstretch'|'ystretch'|  
 'hasstroke'|'hasfill'|'width'|'height'|'logwidth'|'logheight'

unary\_function = 'abs'|'sqrt'|'sin'|'cos'|'tan'|'atan'|'atan2'

binary\_function = 'min'|'max'

ternary\_function = 'if'

function\_reference = '?' 'a-z,A-Z,0-9' ' '

modifier\_reference = '$' '0-9' ' '

basic\_expression =

number |

identifier |

function\_reference |

modifier\_reference |

unary\_function '(' additive\_expression ')' |

binary\_function '(' additive\_expression ',' additive\_expression ')' |

ternary\_function '(' additive\_expression ',' additive\_expression ',

' additive\_expression ')' | '(' additive\_expression ')'

unary\_expression = '-' basic\_expression

multiplicative\_expression =

basic\_expression |

multiplicative\_expression '\*' basic\_expression |

multiplicative\_expression '/' basic\_expression

additive\_expression =

multiplicative\_expression |

additive\_expression '+' multiplicative\_expression |

additive\_expression '-' multiplicative\_expression

|  |  |
| --- | --- |
| identifier | Description |
| left | The left position of the svg:viewBox attribute has to be used. |
| top | The top position the svg:viewBox attribute has to be used. |
| right | The right position the svg:viewBox attribute has to be used. |
| bottom | The bottom position the svg:viewBox attribute has to be used. |
| xstretch | The value of draw:path-stretchpoint-x is used. |
| ystretch | The value of draw:path-stretchpoint-y is used. |
| hasstroke | If the shape has a line style, a value of 1 is used. |
| hasfill | If the shape has a fill style, a value of 1 is used. |
| width | The width of the svg:viewBox is used. |
| height | The height of the svg:viewBox is used. |
| logwidth | The width of the svg:viewBox in 1/100th mm is used. |
| logheight | The height of the svg:viewBox in 1/100th mm is used. |

A example for the draw:formula attribute would be: draw:formula=”width+10-$0” If the value of the first modifier value is “100” and the width of the svg:viewbox is “10000”, then the result of the above formula would be 10000 + 10 – 100 = 9910

<define name="draw-equation-attlist" combine="interleave">

<optional>

<attribute name="draw:formula">

<ref name="string"/>

</attribute>

</optional>

</define>

### Enhanced Geometry - Handle Attributes

#### Handle

The <draw:handle> element specifies a single interaction handle.

<define name="draw-handle">

<element name="draw:handle">

<ref name="draw-handle-attlist"/>

<empty/>

</element>

</define>

#### Handle Mirror Vertical

The draw:handle-mirror-vertical attribute specifies if the x position of the handle is mirrored.

<define name="draw-handle-attlist" combine="interleave">

<optional>

<attribute name="draw:handle-mirror-vertical" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Handle Mirror Horizontal

The draw:handle-mirror-horizontal attribute specifies if the y position of the handle is mirrored.

<define name="draw-handle-attlist" combine="interleave">

<optional>

<attribute name="draw:handle-mirror-horizontal" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Handle Switched

The draw:handle-switched attribute specifies if the handle directions are swapped if the shape height is higher than the shape width.

<define name="draw-handle-attlist" combine="interleave">

<optional>

<attribute name="draw:handle-switched" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Handle Position

The draw:handle-position attribute specifies the position of the handle and consists of two parameters.

Each parameter can be a float or it can have one of the following enhancements:

* A “?” is used to mark the beginning of a formula name. The result of the element's draw:formula attribute is used as parameter value in this case.
* If “$” is preceding a integer value, the value is a indexing a draw:modifiers attribute. The corresponding modifier value is used as parameter value then.
* Instead of a number a parameter can also be one of the following constants:

| Constant | Description |
| --- | --- |
| left | The value of the draw:coordinate-origin-x attribute has to be used. |
| top | The value of the draw:coordinate-origin-y attribute has to be used. |
| right | The value of the draw:coordinate-origin-x attribute + the value of the draw:coordinate-width has to be used. |
| bottom | The value of the draw:coordinate-origin-y attribute + the value of the draw:coordinate-height has to be used. |
| xstretch | The value of draw:path-stretchpoint-x is used. |
| ystretch | The value of draw:path-stretchpoint-y is used. |
| hasstroke | If the shape has a line style, a value of 1 is used. |
| hasfill | If the shape has a fill style, a value of 1 is used. |
| width | The width of the svg:viewBox is used. |
| height | The height of the svg:viewBox is used. |
| logwidth | The width of the svg:viewBox in 1/100th mm is used. |
| logheight | The height of the svg:viewBox in 1/100th mm is used. |

The draw:handle-position attribute specifies the position of the handle. If the draw:handle-polar attribute is not set, the first parameter of the draw:handle-position attribute specifies the horizontal handle position, the vertical handle position is described by the second parameter. If the draw:handle-polar attribute is set, then the handle is a polar handle and the first parameter of the draw:handle-position attribute specifies the angle in grad, the handle radius is specified by the second parameter. A example for the draw:handle-position attribute is: draw:handle-position = "left $5"

<define name="draw-handle-attlist" combine="interleave">

<attribute name="draw:handle-position">

<ref name="string"/>

</attribute>

</define>

#### Handle Range X Minimum

The draw:handle-range-x-minimum attribute specifies the horizontal minimum value of the range the handle can be moved within. The syntax for the attribute is the same as for the attribute draw:handle-position, except that only the first parameter is used. Example for this attribute declaring a minimum value that results from the first formula equation: draw:handle-range-x-minimum = ”?Formula1”

<define name="draw-handle-attlist" combine="interleave">

<optional>

<attribute name="draw:handle-range-x-minimum">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Handle Range X Maximum

The draw:handle-range-x-maximum attribute specifies the horizontal maximum value of the range the handle can be moved within. The syntax for the attribute is the same as for the attribute draw:handle-range-x-minimum.

<define name="draw-handle-attlist" combine="interleave">

<optional>

<attribute name="draw:handle-range-x-maximum">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Handle Range Y Minimum

The draw:handle-range-y-minimum attribute specifies the vertical minimum value of the range the handle can be moved within. The syntax for the attribute is the same as for the attribute draw:handle-range-x-minimum.

<define name="draw-handle-attlist" combine="interleave">

<optional>

<attribute name="draw:handle-range-y-minimum">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Handle Range Y Maximum

The draw:handle-range-y-maximum attribute specifies the vertical maximum value of the range the handle can be moved within. The syntax for the attribute is the same as for the attribute draw:handle-range-x-minimum.

<define name="draw-handle-attlist" combine="interleave">

<optional>

<attribute name="draw:handle-range-y-maximum">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Handle Polar

The draw:handle-polar attribute specifies that the handle is a polar handle. The syntax for this attribute is the same as for the attribute draw:handle-position. The first parameter specifies the horizontal center position, the vertical center position is specified by the second parameter. If this attribute is set, the attributes draw:handle-range-x and draw:handle-range-y are ignored, instead the attributes draw:handle-radius-range-minimum and draw:handle-radius-range-maximum can be used.

<define name="draw-handle-attlist" combine="interleave">

<optional>

<attribute name="draw:handle-polar">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Handle Radius Range Minimum

If the attribute draw:handle-radius-range-minimum is set, it specifies the minimum radius range that can be used for a polar handle. The syntax is the same as for the attribute draw:handle-range-x-minimum.

<define name="draw-handle-attlist" combine="interleave">

<optional>

<attribute name="draw:handle-radius-range-minimum">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Handle Radius Range Maximum

If the attribute draw:handle-radius-range-maximum is set, it specifies the maximum radius range that can be used for a polar handle. The syntax is the same as for the attribute draw:handle-range-x-minimum.

<define name="draw-handle-attlist" combine="interleave">

<optional>

<attribute name="draw:handle-radius-range-maximum">

<ref name="string"/>

</attribute>

</optional>

</define>

## Presentation Shapes

Presentation shapes are special text box, image, object or thumbnail drawing shapes contained in a presentation. Presentation shapes use styles with a style family value of presentation, unlike drawing shapes which use styles with a style family value of graphic. Presentation shapes can be empty, acting only as placeholders. If a draw page's presentation layout (see section 14.15) is changed, all presentation shapes are adapted automatically.

Standard drawing shapes can also be used in presentations. The presentation:class attribute distinguishes presentation shapes from drawing shapes. Unlike presentation shapes, standard drawing shapes are not adapted if the presentation page layout is changed.

### Common Presentation Shape Attributes

The attributes described in this section are common to all presentation shapes.

#### Style

Presentation shapes can have styles from the style family presentation assigned to them. A presentation shape can be distinguished from a drawing shape by checking whether it has a presentation:style-name attribute. A drawing shape uses a draw:style-name attribute with a style from the graphic family, while a presentation shape uses a presentation:style-name attribute with a style from the presentation family. This name links to a <style:style> element with the family presentation. The formatting properties in this style and its optional parent styles are used to format this shape. See also section 9.2.15.

#### Class

The presentation:class attribute classifies presentation shapes by their usage within a draw page (for instance as title or outline). The following classes exist:

* title: Titles are standard text shapes.
* outline: Outlines are standard text shapes.
* subtitle: Subtitles are standard text shapes.
* text: Presentation texts are standard text shapes.
* graphic: Presentation graphics are standard graphic shapes
* object: Presentation objects are standard object shapes.
* chart: Presentation charts are standard object shapes.
* table: Presentation tables are standard object shapes.
* orgchart: Presentation organization charts are standard object shapes.
* page: Presentation pages are used on notes pages.
* notes: Presentation notes are used on notes pages.
* handout: Presentation handouts are placeholder for the drawing page in a handout page.

The next four classes can be used only for drawing shapes that are contained in master pages. Depending on the settings of the page (see section 15.36), they are displayed automatically on drawing pages that use the master page.

* header: The drawing shape is used as a header. Header shapes are standard text shapes.
* footer: The drawing shape is used as a footer. Footer shapes are standard text shapes.
* date-time: The drawing shape is used as a date and/or time shape. Date and Time shapes are standard text shapes.
* page-number: The drawing shape is used as a page number shape. Page Number shapes are standard text shapes.

<define name="presentation-shape-attlist" combine="interleave">

<optional>

<attribute name="presentation:class">

<ref name="presentation-classes"/>

</attribute>

</optional>

</define>

<define name="presentation-classes">

<choice>

<value>title</value>

<value>outline</value>

<value>subtitle</value>

<value>text</value>

<value>graphic</value>

<value>object</value>

<value>chart</value>

<value>table</value>

<value>orgchart</value>

<value>page</value>

<value>notes</value>

<value>handout</value>

<value>header</value>

<value>footer</value>

<value>date-time</value>

<value>page-number</value>

</choice>

</define>

#### Placeholder

The presentation:placeholder attribute defines if a shape is a placeholder or a presentation object with actual content.

<define name="presentation-shape-attlist" combine="interleave">

<optional>

<attribute name="presentation:placeholder">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### User-Transform

The presentation:user-transformed attribute specifies whether the size and position of the shape is set by the user or is set by the corresponding presentation shape on the master page.

<define name="presentation-shape-attlist" combine="interleave">

<optional>

<attribute name="presentation:user-transformed">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## Presentation Animations

In a presentation document, shapes can be animated. Each presentation page can have an optional <presentation:animations> element, which is a container for animation effects. The animation is executed when the page is displayed during a presentation.

This specification allows multiple effects for one and the same shape within a page. Applications may have restrictions regarding the number and combination of effects applicable to a shape, for instance may support only one show and one hide effect per shape with an additional show and hide text and one dim and sound effect.

<define name="presentation-animations">

<element name="presentation:animations">

<zeroOrMore>

<choice>

<ref name="presentation-animation-elements"/>

<ref name="presentation-animation-group"/>

</choice>

</zeroOrMore>

</element>

</define>

<define name="presentation-animation-elements">

<choice>

<ref name="presentation-show-shape"/>

<ref name="presentation-show-text"/>

<ref name="presentation-hide-shape"/>

<ref name="presentation-hide-text"/>

<ref name="presentation-dim"/>

<ref name="presentation-play"/>

</choice>

</define>

### Sound

The element <presentation:sound> may be contained in all animation effect elements that support sounds. The sound file referenced by the XLink attributes is played when the effect is executed.

<define name="presentation-sound">

<element name="presentation:sound">

<ref name="presentation-sound-attlist"/>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<choice>

<value>simple</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onRequest">

<choice>

<value>onRequest</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="xlink:show">

<choice>

<value>new</value>

<value>replace</value>

</choice>

</attribute>

</optional>

<empty/>

</element>

</define>

The attribute that may be associate with the <presentation:sound> element is:

* Play full

#### Play Full

If the value of the attribute presentation:play-full is true, the next effect starts after the sound is played. If the value of this attribute is false, the next effect starts when the current effect is finished.

<define name="presentation-sound-attlist" combine="interleave">

<optional>

<attribute name="presentation:play-full">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Show Shape

The element <presentation:show-shape> makes a shape visible. If there is a <presentation:show-shape> element for one shape, this shape is automatically invisible before the effect is executed.

<define name="presentation-show-shape">

<element name="presentation:show-shape">

<ref name="common-presentation-effect-attlist"/>

<optional>

<ref name="presentation-sound"/>

</optional>

</element>

</define>

The attributes that may be associated with the <presentation:show-shape> element are:

* Shape
* Effect
* Direction
* Speed
* Delay
* Start Scale
* Path

#### Shape

The attribute draw:shape-id specifies the shape of this effect using a shape ID.

<define name="common-presentation-effect-attlist" combine="interleave">

<attribute name="draw:shape-id">

<ref name="IDREF"/>

</attribute>

</define>

#### Effect

The attribute presentation:effect specifies the type of effect.

* none: no effect is used.
* fade: the shape fades from its visible or hidden state to a hidden or visible state.
* move: the shape moves from or to its final position.
* stripes: the shape is faded in or out by drawing or removing horizontal or vertical stripes that change their size.
* open: the shape is drawn or removed line by line, either horizontally or vertically, starting at the center of the shape.
* close: the shape is drawn or removed line by line, either horizontally or vertically, starting at the edge of the shape.
* dissolve: the shape is faded in or out by drawing or removing small blocks in a random fashion.
* wavyline: the shape is faded in our out by drawing or removing small blocks in a snake like fashion.
* random: an effect is chosen at random to fade the shape in or out.
* lines: the shape is faded in our out by drawing or removing line by line, either horizontally or vertically, in a random fashion.
* laser: this effect is only available for text shapes; the characters of the text are moved one by one from the top edge of the screen to their final position.
* appear: the shape is faded in by just switching its state from invisible to visible.
* hide: the shape is faded out by just switching its state from visible to invisible.
* move-short: like the move effect, but the moving shape is clipped to its final bounding rectangle during fade.
* checkerboard: the shape is faded in or out by drawing or removing checkerboard like blocks that increase in size over time.
* rotate: the shape rotates horizontally or vertically for a short amount of time during this effect.
* stretch: the shape is faded in or out by changing its size during this effect.

<define name="common-presentation-effect-attlist" combine="interleave">

<optional>

<attribute name="presentation:effect" a:defaultValue="none">

<ref name="presentationEffects"/>

</attribute>

</optional>

</define>

<define name="presentationEffects">

<choice>

<value>none</value>

<value>fade</value>

<value>move</value>

<value>stripes</value>

<value>open</value>

<value>close</value>

<value>dissolve</value>

<value>wavyline</value>

<value>random</value>

<value>lines</value>

<value>laser</value>

<value>appear</value>

<value>hide</value>

<value>move-short</value>

<value>checkerboard</value>

<value>rotate</value>

<value>stretch</value>

</choice>

</define>

#### Direction

The attribute presentation:direction specifies the direction of the effect. This is relevant for some effects only.

<define name="common-presentation-effect-attlist" combine="interleave">

<optional>

<attribute name="presentation:direction" a:defaultValue="none">

<ref name="presentationEffectDirections"/>

</attribute>

</optional>

</define>

<define name="presentationEffectDirections">

<choice>

<value>none</value>

<value>from-left</value>

<value>from-top</value>

<value>from-right</value>

<value>from-bottom</value>

<value>from-center</value>

<value>from-upper-left</value>

<value>from-upper-right</value>

<value>from-lower-left</value>

<value>from-lower-right</value>

<value>to-left</value>

<value>to-top</value>

<value>to-right</value>

<value>to-bottom</value>

<value>to-upper-left</value>

<value>to-upper-right</value>

<value>to-lower-right</value>

<value>to-lower-left</value>

<value>path</value>

<value>spiral-inward-left</value>

<value>spiral-inward-right</value>

<value>spiral-outward-left</value>

<value>spiral-outward-right</value>

<value>vertical</value>

<value>horizontal</value>

<value>to-center</value>

<value>clockwise</value>

<value>counter-clockwise</value>

</choice>

</define>

#### Speed

The attribute presentation:speed specifies the speed of the effect.

<define name="common-presentation-effect-attlist" combine="interleave">

<optional>

<attribute name="presentation:speed" a:defaultValue="medium">

<ref name="presentationSpeeds"/>

</attribute>

</optional>

</define>

<define name="presentationSpeeds">

<choice>

<value>slow</value>

<value>medium</value>

<value>fast</value>

</choice>

</define>

#### Delay

The attribute presentation:delay specifies the delay before a presentation effect starts after the previous one has been finished.

<define name="common-presentation-effect-attlist" combine="interleave">

<optional>

<attribute name="presentation:delay">

<ref name="duration"/>

</attribute>

</optional>

</define>

#### Start Scale

Some effects scale a shape during execution of the effect. The attribute presentation:start-scale specifies the start size of the shape as a percentage of its original size.

<define name="common-presentation-effect-attlist" combine="interleave">

<optional>

<attribute name="presentation:start-scale" a:defaultValue="100%">

<ref name="percent"/>

</attribute>

</optional>

</define>

#### Path

The attribute presentation:path-id applies to move effects. The attribute specifies the shape-id of a polygon shape. The effect moves along the lines of the specified polygon. The referenced polygon is not visible during the presentation.

<define name="common-presentation-effect-attlist" combine="interleave">

<optional>

<attribute name="presentation:path-id"/>

</optional>

</define>

### Show Text

The element <presentation:show-text> makes the text of a shape visible. If there is a <show-text> element for one shape, the text of the shape is automatically invisible before the effect is executed.

<define name="presentation-show-text">

<element name="presentation:show-text">

<ref name="common-presentation-effect-attlist"/>

<optional>

<ref name="presentation-sound"/>

</optional>

</element>

</define>

The attributes that may be associated with the <presentation:show-text> element are:

* Shape, Effect, Direction, Speed, Start Scale, Path – see section 9.7.2

### Hide Shape

The element <presentation:hide-shape> makes a shape invisible.

<define name="presentation-hide-shape">

<element name="presentation:hide-shape">

<ref name="common-presentation-effect-attlist"/>

<optional>

<ref name="presentation-sound"/>

</optional>

</element>

</define>

The attributes that may be associated with the <presentation:hide-shape> element are:

* Shape, Effect, Direction, Speed, Start Scale, Path – see section 9.7.2

### Hide Text

The element <presentation:hide-text> makes the text of a shape invisible.

<define name="presentation-hide-text">

<element name="presentation:hide-text">

<ref name="common-presentation-effect-attlist"/>

<optional>

<ref name="presentation-sound"/>

</optional>

</element>

</define>

The attributes that may be associated with the <presentation:hide-text> element are:

* Shape, Effect, Direction, Speed, Start Scale, Path – see section 9.7.2

### Dim

The element <presentation:dim> fills a shape in a single color.

<define name="presentation-dim">

<element name="presentation:dim">

<ref name="presentation-dim-attlist"/>

<optional>

<ref name="presentation-sound"/>

</optional>

</element>

</define>

The attributes that may be associated with the <presentation:dim> element are:

* Shape – see section 9.7.2
* Color

<define name="presentation-dim-attlist" combine="interleave">

<attribute name="draw:shape-id">

<ref name="IDREF"/>

</attribute>

</define>

#### Color

The attribute draw:color specifies the color that is used to fill the shape when the shape is dimmed.

<define name="presentation-dim-attlist" combine="interleave">

<attribute name="draw:color">

<ref name="color"/>

</attribute>

</define>

### Play

The element <presentation:play> starts the animation of a shape that supports animation.

<define name="presentation-play">

<element name="presentation:play">

<ref name="presentation-play-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the <presentation:play> element are:

* Shape ID and Speed – see section 9.7.2

<define name="presentation-play-attlist" combine="interleave">

<attribute name="draw:shape-id">

<ref name="IDREF"/>

</attribute>

<optional>

<attribute name="presentation:speed" a:defaultValue="medium">

<ref name="presentationSpeeds"/>

</attribute>

</optional>

</define>

### Effect groups

The element <presentation:animation-group> allows to specify that multiple effects should happen at the same time.

<define name="presentation-animation-group">

<element name="presentation:animation-group">

<zeroOrMore>

<ref name="presentation-animation-elements"/>

</zeroOrMore>

</element>

</define>

## SMIL Presentation Animations

This chapter describes [SMIL20] based shape animations for presentation documents. This kind of animations can be used instead of the ones specified by the <presentation:animations> elements if one of the following items is required:

* Multiple animations per shape.
* A mixture of animations starting on user interaction and starting automatically per page.
* Multiple animations running at the same time.
* Additional effects 'programmed' in XML by combining basic animation elements.
* Document transformations to SVG including [SMIL20].

### Recommended Usage Of SMIL

The following sections describe the usage of SMIL animation elements that enables an office application to present the animation elements in a simple and easy to use UI to the user. This UI may contain a single main sequence of effects, and in addition to this, multiple sequences of effects that are started as interactions on drawing shapes. An effect is a combination of one or more animation elements that animate a single shape and or a shape's paragraphs.

It is recommended, that in user interfaces, effects can be created by using presets that have localized and meaningful names. This way, the user will not work on a hierarchy of SMIL animation elements, but on one dimensional lists of effects, which are much easier to handle for the office application users.

#### Slide Animation

Each <draw:page> element may optionally have an <anim:par> element that defines the animation of that page during a running slideshow. This <anim:par> element should contain one <anim:seq> element which is the main sequence for shape effects and zero or more <anim:seq> elements that define interactive sequences for shapes that contain animation interactions. The animation elements are executed after the slide has executed its initial transition.

#### Main Sequence

The main sequence is a <anim:seq> element which contains the effects that should start after the slide has executed its initial transition. Since this is a sequential container, its child nodes are executed one after each other. If a child node's smil:begin attribute has the value indefinite, then the execution is stalled until the user advances the slideshow by a mouse or key interaction.

The first level of child nodes in the main sequence should be <anim:par> elements that group animation elements that are started with the same user interaction. The second level of child nodes should be <anim:par> elements that group animations elements that start at the same time. The third level of child nodes should be <anim:par> elements that group the animation elements for a single effect.

The following example shows a main sequence with the effects A, B, C and D. Effect A is started on user interaction, effect B is started simultaneously with A. Effect C is started 4 seconds after the effects A and B. Effect D is started on the next user interaction:

<amin:par> <!-- timing root-->

<anim:seq> <!-- main sequence-->

<anim:par smil:begin="indefinite">

<!-- first user interaction -->

<anim:par smil:begin="0s" smil:dur="4s">

<!-- first group of effects to execute -->

<anim:par> <!-- effect a -->

<!-- nodes for effect a-->

</anim:par>

<anim:par> <!-- effect b -->

<!-- nodes for effect b-->

</anim:par>

</anim:par>

<anim:par smil:begin="4s">

<!-- second group of effects to execute -->

<anim:par> <!-- effect c -->

<!-- nodes for effect c-->

</anim:par>

</anim:par>

</anim:par>

<anim:par>

<!-- second user interaction-->

<anim:par smil:begin="indefinite">

<!-- first group of effects to execute -->

<anim:par> <!-- effect d -->

<!--- nodes for effect d-->

</anim:par>

</anim:par>

</anim:par>

</anim:seq>

</anim:par>

#### Interactive Sequence

An interactive sequence is a <anim:seq> element that should have the same structure as a main sequence. The only difference is that the <anim:par> element in the first level has a smil:begin attribute with a value like [shape-id].click, where [shape-id] identifies a drawing shapes by its draw:id attribute. These animation elements are triggered when the user interacts with the element defined by [shape-id].

### Document Dependent SMIL Animation Attribute Values

This section describes the attribute values of the document type dependent attributes specified in section 13 if they are used within presentation documents.

#### Iteration Target Element

For presentation documents, the smil:targetElement attribute of the <anim:iterate> element (see section 13.4.4) can reference drawing shape or paragraph elements. If the anim:sub-item attribute of <anim:iterate> has the value whole, the iteration includes the drawing shape's background and its text. If the anim:sub-item attribute's value is text, only the shape's text is iterated.

#### Iteration Type

For presentation documents, the anim:iterate-type attribute of the <anim:iterate> element (see section 13.4.4) can have the following values:

* by-paragraph: the target shape is iterated by paragraphs.
* by-word: the target shape or paragraph is iterated by words.
* by-letter: the target shape or paragraph is iterated by letters.

#### Target Element

For presentation documents, the smil:targetElement specified in section 13.3.1 can reference drawing shapes by their draw:id attribute value and paragraphs by their text:id attribute value.

#### Target Attribute

For presentation documents, the smil:attributeName attribute specified in section 13.3.1 can have the following values:

* x: animates the elements x position, values are given in screen space where 0 is the left edge and 1 is the right edge.
* y: animates the elements y position, values are given in screen space where 0 is the top and 1 is the bottom.
* width: animates the elements width, values are given in screen space where 0 is no width and 1 is the same width as the screen.
* height: animates the elements height, values are given in screen space where 0 is no height and 1 is the same height as the screen.
* color: animates the elements color, this animates both fill,line and char color. Values can be RGB or HSL
* rotate: animates the elements rotation, this animates both the shapes and text animation.
* skewX: animates the elements horizontal skew.
* fillColor: animates the elements fill color.
* fillStyle: animates the elements fill style.
* lineColor: animates the elements line color.
* lineStyle: animates the elements line style.
* charColor: animates the elements char color.
* charWeight: animates the elements text weight.
* charUnderline: animates the elements text underline.
* charFontName: animates the elements text font.
* charHeight: animates the elements text height.
* charPosture: animates the elements text posture.
* visibility: animates the elements visibility.
* opacity: animates the elements opacity.

#### Target Element Sub Item

For presentation documents, the anim:sub-item attribute specified in section 13.3.1 can have the following values:

* whole: animates both the shape and its text.
* background:animates only the shapes background and not its text.
* text: animates only the text.

#### Formula

For presentation documents, the anim:formula attribute specified in section 13.3.2 may contain the following additional identifiers:

* e,: this is the Euler constant.
* x: this is the animated elements left edge in screen space where 0 is the left edge of the screen and 1 is the right edge.
* y: this is the animated elements top edge in screen space, where 0 is the top edge of the screen and 1 is the bottom edge.
* width: this is the animated elements width in screen space, where 0 is no width and 1 is the screens width.
* height: this is the animated elements height in screen space, where 0 is no height and 1 is the screens height.

#### Command

For presentation documents, The anim:command attribute of the <anim:command> element (see section 13.6.1) can have the following values:

* custom: the command is user defined.
* verb: the command targets an OLE2 shape. The parameter verb is the verb number that will be executed at the OLE2 shape.
* play: the command targets a media shape and starts its playback. The optional parameter media-time defines the playback start time in seconds. If this parameter is not set, playback starts at the last position.
* toggle-pause: the command targets a media shape and toggles its playback state from play to paused or from paused to play.
* stop: the command targets a media shape and stops its playback.
* stop-audio: the command has no target and stops all running audio playback.

### SMIL Presentation Animation Attributes

The attributes described in this section can be attached to the animation elements described in section 13.4, 13.5 and 13.6 if they are used inside presentation documents. They don't influence the actual animation behavior, but help office application user interfaces in presenting animation effect settings to the user.

#### Node Type

The presentation:node-type attribute specifies a node type for an animation element. This attribute does not alter the element's behavior but helps the application to quickly identify an elements purpose inside an animation element hierarchy. The value of this attribute can be:

* default: this animation element has no special meaning for the application. This is the default setting.
* on-click: this animation element is the root element of an effect that starts with a user click.
* with-previous: this animation element is the root element of an effect that starts with the previous effect.
* after-previous: this animation element is the root element of an effect that starts after the previous effect.
* timing-root: this animation element is the root element for the animation of a page.
* main-sequence: this animation element is the root element for the main sequence of effects of a page
* interactive-sequence: this animation element is the root element for a sequence of effects that are started when the user interactively clicks on a special element inside a page.

<define name="common-anim-attlist" combine="interleave">

<optional>

<attribute name="presentation:node-type" a:defaultValue="default">

<choice>

<value>default</value>

<value>on-click</value>

<value>with-previous</value>

<value>after-previous</value>

<value>timing-root</value>

<value>main-sequence</value>

<value>interactive-sequence</value>

</choice>

</attribute>

</optional>

</define>

#### Preset Id

The presentation:preset-id attribute specifies the name of the preset that was used to create this animation element.

<define name="common-anim-attlist" combine="interleave">

<optional>

<attribute name="presentation:preset-id">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Preset Sub Type

The presentation:preset-sub-type attribute specifies the sub type of the preset that was used to create this animation element.

<define name="common-anim-attlist" combine="interleave">

<optional>

<attribute name="presentation:preset-sub-type">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Preset Class

The presentation:preset-class attribute specifies the class of the preset that was used to create this animation element. The value of this attribute can be:

* custom: the preset was a user defined one. This is the default setting.
* entrance: the preset was an entrance effect.
* exit: the preset was an exit effect.
* emphasis: the preset was an emphasis effect.
* motion-path: the preset was a motion path.
* ole-action: the preset was an ole action.
* media-call: the preset was a media call.

<define name="common-anim-attlist" combine="interleave">

<optional>

<attribute name="presentation:preset-class" a:defaultValue="custom">

<choice>

<value>custom</value>

<value>entrance</value>

<value>exit</value>

<value>emphasis</value>

<value>motion-path</value>

<value>ole-action</value>

<value>media-call</value>

</choice>

</attribute>

</optional>

</define>

#### Master Element

The presentation:master-element attribute specifies the id of an animation element. Office application user interfaces may only display animation elements that don't have a presentation:master-element attribute, and may consider the ones that have a presentation:master-element to be a part of the animation element that is referenced.

<define name="common-anim-attlist" combine="interleave">

<optional>

<attribute name="presentation:master-element">

<ref name="IDREF"/>

</attribute>

</optional>

</define>

#### Group Id

The presentation:group-id attribute specifies a group id. This id can be used to group animation elements within the user interface, where a group consists of all animation elements that have the same group id. This can be used for instance to group the animation elements that animate the paragraphs of a single shape.

<define name="common-anim-attlist" combine="interleave">

<optional>

<attribute name="presentation:group-id">

<ref name="string"/>

</attribute>

</optional>

</define>

## Presentation Events

Many objects inside a presentation document support special presentation events. For example, a user can advance the presentation one frame when he clicks on an object with a corresponding event. Presentation events are contained with a graphic object's event listener table. See section 9.2.21 for details.

<define name="presentation-event-listener">

<element name="presentation:event-listener">

<ref name="presentation-event-listener-attlist"/>

<optional>

<ref name="presentation-sound"/>

</optional>

</element>

</define>

#### Event Name

The script:event-name attribute specifies the name of the event. See section 12.4.1 for details.

<define name="presentation-event-listener-attlist" combine="interleave">

<attribute name="script:event-name">

<ref name="string"/>

</attribute>

</define>

#### Event Action

The kind of action that is executed when the event is triggered can be selected with the presentation:action attribute. The following actions are available:

* none: no action is performed when this event is triggered.
* previous-page: the presentation jumps to the previous page.
* next-page: the presentation jumps to the next page.
* first-page: the presentation jumps to the first page of the current document.
* last-page: the presentation jumps to the last page of the current document.
* hide: the object that contains this event is hidden if the event is triggered.
* stop: if a slide show is active, it will be stopped.
* execute: another application is lunched when this event is triggered. The application can be set with an xlink.
* show: the target of an URL is opened when this event is triggered. The URL can be set with an xlink.
* verb: if the object that contains this event supports the execution of [OLE] verbs, the verb with the id set in the presentation:verb attribute is executed.
* fade-out: the object that contains this event is faded out when this event is triggered. The attributes presentation:effect, presentation:direction, presentation:speed and presentation:start-scale can be used to set the effect.
* sound: an audio effect is started when the effect is triggered. The audio effect is described by a <presentation:sound> child element.

<define name="presentation-event-listener-attlist" combine="interleave">

<attribute name="presentation:action">

<choice>

<value>none</value>

<value>previous-page</value>

<value>next-page</value>

<value>first-page</value>

<value>last-page</value>

<value>hide</value>

<value>stop</value>

<value>execute</value>

<value>show</value>

<value>verb</value>

<value>fade-out</value>

<value>sound</value>

</choice>

</attribute>

</define>

#### Event Effect

See presentation:effect attribute in section 9.7.2.

<define name="presentation-event-listener-attlist" combine="interleave">

<optional>

<attribute name="presentation:effect" a:defaultValue="none">

<ref name="presentationEffects"/>

</attribute>

</optional>

</define>

#### Effect Direction

See presentation:direction attribute in section 9.7.2.

<define name="presentation-event-listener-attlist" combine="interleave">

<optional>

<attribute name="presentation:direction" a:defaultValue="none">

<ref name="presentationEffectDirections"/>

</attribute>

</optional>

</define>

#### Effect Speed

See presentation:speed attribute in section 9.7.2.

<define name="presentation-event-listener-attlist" combine="interleave">

<optional>

<attribute name="presentation:speed" a:defaultValue="medium">

<ref name="presentationSpeeds"/>

</attribute>

</optional>

</define>

#### Start Scale

See presentation:start-scale attribute in section 9.7.2.

<define name="presentation-event-listener-attlist" combine="interleave">

<optional>

<attribute name="presentation:start-scale" a:defaultValue="100%">

<ref name="percent"/>

</attribute>

</optional>

</define>

#### Link

Depending on the action selected by the presentation:action attribute, this xlink:href attribute either selects a document bookmark or an application.

<define name="presentation-event-listener-attlist" combine="interleave">

<optional>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

</optional>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<choice>

<value>simple</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="xlink:show" a:defaultValue="embed">

<choice>

<value>embed</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onRequest">

<choice>

<value>onRequest</value>

</choice>

</attribute>

</optional>

</define>

#### Verb

The [OLE] verb defined by the presentation:verb attribute is executed for event listeners of type verb at the object that contains this event.

<define name="presentation-event-listener-attlist" combine="interleave">

<optional>

<attribute name="presentation:verb">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

## Presentation Text Fields

This section describes text fields that are specific to the text of drawing shapes that are contained presentations.

### Header Field

Header fields display a header text specified in a header field declaration (see section 9.11.2). Which header field declaration is used is specified by the presentation:use-header-name attribute of the draw page where the field occurs. If the field is contained in a presentation shape inside a master page (see section 9.6.1), then the presentation:use-header-name attribute of the drawing page for which the drawing shape is displayed is used (see section 9.1.4).

This field is mainly used inside master pages. Since its value may differ for the individual drawing pages that make use of a master page, the current field value is not available.

<define name="paragraph-content" combine="choice">

<element name="presentation:header">

<empty/>

</element>

</define>

### Footer Field

Footer fields display a footer text specified in a footer field declaration (see section 9.11.3). Which footer field declaration is used is specified by the presentation:use-footer-name attribute of the draw page where the field occurs. If the field is contained in a presentation drawing shape inside a master page (see section 9.6.1), then the presentation:use-footer-name attribute of the drawing page for which the drawing shape is displayed is used (see section 9.1.4).

This field is mainly used inside master pages. Since its value may differ for the individual drawing pages that make use of a master page, the current field value is not available.

<define name="paragraph-content" combine="choice">

<element name="presentation:footer">

<empty/>

</element>

</define>

### Date and Time Field

Date and time fields display a date/time text as specified in the date/time field declaration(see section 9.11.4). Which date-time field declaration is used is specified by the presentation:use-date-time-name attribute of the draw page where the field occurs. If the field is contained in a presentation drawing shape inside a master page (see section 9.6.1), then the presentation:use-date-time-name attribute of the drawing page for which the drawing shape is displayed is used (see section 9.1.4).

This field is mainly used inside master pages. Since its value may differ for the individual drawing pages that make use of a master page, the current field value is not available.

<define name="paragraph-content" combine="choice">

<element name="presentation:date-time">

<empty/>

</element>

</define>

## Presentation Document Content

### Presentation Declarations

Some presentation specific text fields need per-document declarations before they can be used. For example, header fields require that the header text that is displayed is declared separately. These declarations are collected at the beginning of a text document.

<define name="presentation-decls">

<zeroOrMore>

<ref name="presentation-decl"/>

</zeroOrMore>

</define>

### Header field declaration

The <presentation:header-decl> element specifies the text of a header field. See section 9.10.1 for details.

<define name="presentation-decl" combine="choice">

<element name="presentation:header-decl">

<ref name="presentation-header-decl-attlist"/>

<text/>

</element>

</define>

#### Name

The presentation:name attribute specifies the name of the header declaration.

<define name="presentation-header-decl-attlist" combine="interleave">

<attribute name="presentation:name">

<ref name="string"/>

</attribute>

</define>

### Footer field declaration

The <presentation:footer-decl> element specifies the text of a footer field. See section 9.10.2 for details.

<define name="presentation-decl" combine="choice">

<element name="presentation:footer-decl">

<ref name="presentation-footer-decl-attlist"/>

<text/>

</element>

</define>

#### Name

The presentation:name attribute specifies the name of the footer declaration.

<define name="presentation-footer-decl-attlist" combine="interleave">

<attribute name="presentation:name">

<ref name="string"/>

</attribute>

</define>

### Date and Time field declaration

The <presentation:date-time-decl> element specifies the text of a date-time field. See section 9.10.3 for details.

<define name="presentation-decl" combine="choice">

<element name="presentation:date-time-decl">

<ref name="presentation-date-time-decl-attlist"/>

<text/>

</element>

</define>

#### Name

The presentation:name attribute specifies the name of the date-time declaration.

<define name="presentation-date-time-decl-attlist" combine="interleave">

<attribute name="presentation:name">

<ref name="string"/>

</attribute>

</define>

#### Source

The presentation:source attribute specifies whether the current date/time or the fixed content of the the field declaration is displayed.

<define name="presentation-date-time-decl-attlist" combine="interleave">

<attribute name="presentation:source">

<choice>

<value>fixed</value>

<value>current-date</value>

</choice>

</attribute>

</define>

#### Date and time formatting style

The date style referenced by the style:data-style-name attribute is used to format the date and time of the presentation:date-time fields if the field is not fixed.

<define name="presentation-date-time-decl-attlist" combine="interleave">

<optional>

<attribute name="style:data-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

### Presentation Settings

The settings for a presentation are stored in the element <presentation:settings> inside an <office:presentation> element. These settings affect the behavior if the document is displayed in a presentation.

<define name="presentation-settings">

<optional>

<element name="presentation:settings">

<ref name="presentation-settings-attlist"/>

<zeroOrMore>

<ref name="presentation-show"/>

</zeroOrMore>

</element>

</optional>

</define>

The attributes that may be associated with the <presentation:settings> element are:

* Start page
* Show
* Full screen
* Endless
* Pause
* Show logo
* Force manual
* Mouse visible
* Mouse as pen
* Start with navigator
* Animation
* Transition on click
* Stay on top

#### Start page

The attribute presentation:start-page specifies the name of the page on which the presentation starts. If this attribute is set, it overrides the presentation:show attribute.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:start-page">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Show

The attribute presentation:show specifies the name of a show definition (see section 9.11.6) that is used for the presentation. If the presentation:start-page attribute is set, it overrides the value of this attribute.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:show">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Full Screen

The attribute presentation:full-screen determines whether the presentation is displayed in full screen mode or in a window.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:full-screen" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Endless

The attribute presentation:endless switches indefinite repetition of a presentation on and off.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:endless" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Pause

If a presentation is repeated indefinitely, the attribute presentation:pause specifies a time duration for displaying a pause screen before the presentation is played again. If this attribute is not set or has a value of 0, a pause screen is not displayed in endless mode. The value of this attribute must conform to the time period format described in §3.2.6 of [xmlschema-2].

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:pause">

<ref name="duration"/>

</attribute>

</optional>

</define>

#### Show Logo

The attribute presentation:show-logo specifies whether or not a presentation application shows its logo on the pause screen.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:show-logo" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Force Manual

If set, the attribute presentation:force-manual overrides all presentation:transition-type properties that are specified within a presentation page (see section 15.36.1) and sets it to manual.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:force-manual" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Mouse Visible

The attribute presentation:mouse-visible specifies whether or not the mouse pointer is visible during a presentation.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:mouse-visible" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Mouse As Pen

The attribute presentation:mouse-as-pen specifies if the mouse pointer is displayed as a pen or a pointer. If the mouse is displayed as a pen the user can draw sketches on the pages during a presentation.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:mouse-as-pen" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Start With Navigator

The attribute presentation:start-with-navigator specifies whether or not the navigator window is initially displayed during a presentation.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:start-with-navigator"

a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Animations

The attribute presentation:animations enables or disables the playback of bitmap animations during a presentation.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:animations" a:defaultValue="enabled">

<choice>

<value>enabled</value>

<value>disabled</value>

</choice>

</attribute>

</optional>

</define>

#### Transition On Click

The attribute presentation:transition-on-click enables or disables a manual transition by a mouse click on the slide during a presentation.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:transition-on-click"

a:defaultValue="enabled">

<choice>

<value>enabled</value>

<value>disabled</value>

</choice>

</attribute>

</optional>

</define>

#### Stay On Top

If the attribute presentation:stay-on-top is set to true, the presentation window is displayed on top of other windows during a presentation.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:stay-on-top" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Show End-Of-Presentation Slide

The attribute presentation:show-end-of-presentation-slide defines whether the presentation application should show an additional slide at the end of the presentation, telling the user that the presentation is finished.

This slides content itself is not defined within the document, but is generated by the application automatically.

<define name="presentation-settings-attlist" combine="interleave">

<optional>

<attribute name="presentation:show-end-of-presentation-slide"

a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Show Definitions

A presentation document can contain one or more elements. A element customizes the order in which the pages are displayed during a presentation. It can be also used to omit pages from the presentation or to repeat pages during the presentation.

This element is optional.

<define name="presentation-show">

<element name="presentation:show">

<ref name="presentation-show-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the <presentation:show> element are:

* Name
* Pages

#### Name

The attribute presentation:name uniquely identifies a <presentation:show> element.

<define name="presentation-show-attlist" combine="interleave">

<attribute name="presentation:name">

<ref name="string"/>

</attribute>

</define>

#### Pages

The attribute presentation:pages contains a comma separated list of page names. The pages are displayed in the order in which they are listed during a presentation that uses this show. Pages can be included more than once.

<define name="presentation-show-attlist" combine="interleave">

<attribute name="presentation:pages"/>

</define>

1. Chart Content

This chapter describes the XML representation of chart content. It contains the following sections:

* Introduction to Chart Documents
* Chart
* Title, Subtitle and Footer
* Legend
* Plot Area
* Wall
* Floor
* Axis
* Series
* Categories
* Data Point
* Mean Value
* Error Indicator
* Regression Curves

## Introduction to Chart Documents

Chart documents are always contained within other XML documents. There are two types of chart container documents:

* Documents that do not provide data for the chart: The chart data is contained in a <table:table> element inside the <chart:chart> element.
* Documents that provide data for the chart: The chart data may be contained in a <table:table> element in the parent document, for example, in a spreadsheet or text document.

The chart data is specified by the <chart:plot-area> element's table:cell-range-address attribute. The <chart:plot-area> element represents the visualization container of all data series in the chart.

## Chart

The <chart:chart> element represents an entire chart, including titles, a legend, and the graphical object that visualizes the underlying data called the plot area. The data underlying the chart is represented by a table element. This element may also exist for embedded charts that get the data from the container document. In this case the chart can be rendered without getting the data from the container document.

<define name="chart-chart">

<element name="chart:chart">

<ref name="chart-chart-attlist"/>

<optional>

<ref name="chart-title"/>

</optional>

<optional>

<ref name="chart-subtitle"/>

</optional>

<optional>

<ref name="chart-footer"/>

</optional>

<optional>

<ref name="chart-legend"/>

</optional>

<ref name="chart-plot-area"/>

<optional>

<ref name="table-table"/>

</optional>

</element>

</define>

#### Class

The chart:class attribute specifies the chart type. The chart type is represented by a namespaced token, meaning an identifier prefixed by an XML namespace prefix, just like any attribute or element name in this specification. This specification defines a number of chart types in the chart namespace (URN: urn:oasis:names:tc:opendocument:xmlns:chart:1.0). Additional chart types may be supported by using a different namespace.

The chart type may be specified more precisely with formatting properties that may be attached to chart styles. For example, a 3D bar chart with horizontal bars is specified by setting the class attribute to chart:bar and by adding the properties for three dimensional and horizontal arrangement in the corresponding style.

<define name="chart-chart-attlist" combine="interleave">

<attribute name="chart:class">

<ref name="namespacedToken"/>

</attribute>

</define>

The pre-defined chart types are:

* line – the data points of each data series are connected through lines.
* area – the area below a data series is filled, and additional data series are stacked.
* circle – a circular chart is segmented according to the relative weights of the data points.
* ring – each data series is represented as a concentric rings, with each ring rendered as if it was part of a circle chart of the series.
* scatter – a pair of data series is used to determine x and y positions for each data point.
* radar – a radial plot of the data points, where the value of each point determines the distance from the chart origin. The data points of a series are connected, thus forming a closed line around the center.
* bar – each data point is depicted by a bar whose length is proportional to the data value.
* stock – four data series are interpreted as opening, minimum, maximum and closing stock values.
* bubble – the first two of three data series are interpreted a positions as in a scatter chart, where the area of each data point is sized relative to the value in the third data series.
* surface – the data points are interpreted as tabular data, where each value defines a 'height' at a specific grid location. The graph may visualize these using colors for height intervals, creating color bands similar to geographical maps.
* gantt – a pair of data series is used to determine the start and end positions for horizontal bars

**Example:** The following table shows examples for the pre-defined chart types. Those charts that use one or two data series use two data series with the values 1;2;3;4 and 1;4;9;16 and the labels a;b;c;d. Those chart types that use more than two data series (stock and bubble) use the data series 1;2;3;4 and multiples thereof. The radar chart uses two data series with five data points.

|  |  |  |
| --- | --- | --- |
| chart:line | chart:area | chart:circle |
| chart:ring | chart:scatter | chart:radar |
| chart:bar | chart:stock | chart:bubble |
| chart:surface | chart:gantt |  |

#### Size

The svg:width and svg:height (see section 9.2.15) attributes define the extent of the entire chart. If they are omitted, the size of the chart is determined by the size of the window in which the chart is displayed.

<define name="chart-chart-attlist" combine="interleave">

<ref name="common-draw-size-attlist"/>

</define>

#### Column and Row Mapping

The chart:column-mapping and chart:row-mapping attributes contain, if provided, a list of indexes of series. The numbers define a reordering of data that comes from a container document that provides the data for the chart. The numbering begins with 1. A list of ascending numbers beginning with 1 has no effect. To exchange two series, their numbers must be exchanged in the list. For example, 1 3 2 4 exchanges the second and the third series.

The chart:column-mapping and chart:row-mapping attributes must not be used simultaneously.

<define name="chart-chart-attlist" combine="interleave">

<optional>

<attribute name="chart:column-mapping">

<ref name="string"/>

</attribute>

</optional>

</define>

<define name="chart-chart-attlist" combine="interleave">

<optional>

<attribute name="chart:row-mapping">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Style Name

The chart:style-name attribute references a chart style. See section 14.16 for details.

Within the style applied to the <chart:chart> element, fill properties (described in section 15.14) and the stroke properties (described in section 15.13) as well as the scale text property described in section 15.29.1 can be used.

<define name="chart-chart-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

## Title, Subtitle and Footer

### Title

The <chart:title> element represents a main title object in a chart document. This element can contain fixed text or it can contain a <table:cell-address> element pointing to the text that should be displayed as the title. This element can also be a sub-element of chart:axis, see section 10.8. In this case the title is displayed beside the axis object.

<define name="chart-title">

<element name="chart:title">

<ref name="chart-title-attlist"/>

<optional>

<ref name="text-p"/>

</optional>

</element>

</define>

#### Table Range

A chart title may be bound to a table cell, causing the current content of the given cell to be displayed in the chart title.

<define name="chart-title-attlist" combine="interleave">

<optional>

<attribute name="table:cell-range">

<ref name="cellAddress"/>

</attribute>

</optional>

</define>

#### Position and Size

The common positioning attributes for drawing objects can be used on <chart:title> elements.

<define name="chart-title-attlist" combine="interleave">

<ref name="common-draw-position-attlist"/>

</define>

#### Style Name

The chart:style-name attribute specifies a chart style for the <chart:title> element. Within the referenced style, fill and stroke properties may be used. They are applied to the surrounding title box. See sections 15.14 and 15.13 for more information. In addition to this, text properties may be used. They are applied to the title text itself. See section 15.4.

<define name="chart-title-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

### Subtitle

The <chart:subtitle> element represents a subtitle which can be used for additional title information in a chart.

The structure of the <chart:subtitle> element is the same as that of the <chart:title> element. The attributes that may be associated with the <chart:subtitle> element are the same as those that may be associated with the <chart:title> element. See section 10.3.1 for more information.

<define name="chart-subtitle">

<element name="chart:subtitle">

<ref name="chart-title-attlist"/>

<optional>

<ref name="text-p"/>

</optional>

</element>

</define>

### Footer

The <chart:footer> element represents a footer below the chart's plot area.

The structure of the subtitle element is the same as that of the <chart:title> title element. See section 10.3.1 for more information.

<define name="chart-footer">

<element name="chart:footer">

<ref name="chart-title-attlist"/>

<optional>

<ref name="text-p"/>

</optional>

</element>

</define>

## Legend

The <chart:legend> element determines whether or not a legend is displayed in the chart. The legend's position may be specified either as a relative or as an absolute position. The size of the legend is calculated automatically and therefore cannot be set as attribute.

<define name="chart-legend">

<element name="chart:legend">

<ref name="chart-legend-attlist"/>

<empty/>

</element>

</define>

#### Legend Placement

The legend can be placed automatically, next to the plot area, or in one of the corners. This placement is determined by the chart:legend-position attribute, which may have the values start, end, top, bottom for legend positions next to the plot area and top-start, bottom-start, top-end or bottom-end for legend positions in the corners. If the legend is placed next to the plot area, in any of the four directions start, end, top bottom, an additional alignment attribute chart:legend-align determines which border (start, end) or axis (center) of the legend and the plot area are to be aligned.

<define name="chart-legend-attlist" combine="interleave">

<choice>

<group>

<attribute name="chart:legend-position">

<choice>

<value>start</value>

<value>end</value>

<value>top</value>

<value>bottom</value>

</choice>

</attribute>

<optional>

<attribute name="chart:legend-align">

<choice>

<value>start</value>

<value>center</value>

<value>end</value>

</choice>

</attribute>

</optional>

</group>

<attribute name="chart:legend-position">

<choice>

<value>top-start</value>

<value>bottom-start</value>

<value>top-end</value>

<value>bottom-end</value>

</choice>

</attribute>

<empty/>

</choice>

</define>

Example: If chart:legend-position="right", the legend will be positioned to the right of the chart's plot area. The chart:legend-align values of start, center, and end will yield legend positions as depicted by the green, red, and blue boxes, respectively.

The legend position can also be given in absolute coordinates, as with any drawing object. If both a drawing position and legend placement options are available, the legend placement takes precedence and the position should reflect the automatic placement.

<define name="chart-legend-attlist" combine="interleave">

<ref name="common-draw-position-attlist"/>

</define>

#### Legend Expansion

The legend needs to be expanded to accommodate additional legend items. The style:legend-expansion attribute determines in which direction the legend expands. Legend expansion of wide and high causes the legend to be expanded horizontally and vertically. An expansion balanced causes expansion into both directions. An expansion value of custom with a numeric style:legend-expansion-aspect-ratio causes the legend to be expanded such that the given ratio between width and height is observed.

<define name="chart-legend-attlist" combine="interleave">

<choice>

<attribute name="style:legend-expansion">

<choice>

<value>wide</value>

<value>high</value>

<value>balanced</value>

</choice>

</attribute>

<group>

<attribute name="style:legend-expansion">

<value>custom</value>

</attribute>

<attribute name="style:legend-expansion-aspect-ratio">

<ref name="double"/>

</attribute>

</group>

<empty/>

</choice>

</define>

#### Legend Styling

Additional styling information for the chart legend can be referenced through the chart:style-name attribute. The style may specify fill and stroke properties. They are applied to the legend object. See sections 15.14 and 15.13 for more information. In addition to this, the style may specify text properties. They are applied to the text inside the legend object. See section 15.4.

<define name="chart-legend-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

## Plot Area

The <chart:plot-area> element is a container for the graphics objects that represent chart data. The main purpose of the plot area is to be a container for the series elements that represent single data series, and the axis elements.

<define name="chart-plot-area">

<element name="chart:plot-area">

<ref name="chart-plot-area-attlist"/>

<zeroOrMore>

<ref name="dr3d-light"/>

</zeroOrMore>

<zeroOrMore>

<ref name="chart-axis"/>

</zeroOrMore>

<zeroOrMore>

<ref name="chart-series"/>

</zeroOrMore>

<optional>

<ref name="chart-stock-gain-marker"/>

</optional>

<optional>

<ref name="chart-stock-loss-marker"/>

</optional>

<optional>

<ref name="chart-stock-range-line"/>

</optional>

<optional>

<ref name="chart-wall"/>

</optional>

<optional>

<ref name="chart-floor"/>

</optional>

</element>

</define>

#### Plot Area Positioning

The plot area's position and size are determined the common positioning and sizing attributes for drawing objects. If the position and size attributes are not specified, the values are calculated by the render application.

<define name="chart-plot-area-attlist" combine="interleave">

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

</define>

#### Plot Area Style

The chart:style-name attribute that is set for the <chart:plot-area> element is used for all data elements contained inside the plot area, unless extra styles are specified in one of those sub-elements. These data elements can be <chart:series> and <chart:data-point> elements.

If the chart is three-dimensional, 3D scene properties may be applied to the plot area. See the section 15.22 - 15.26 for more information.

<define name="chart-plot-area-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Plot Area Data Attributes

If a chart is embedded in a document that provides the data for the chart, the table:cell-range-address attribute reflects the ranges from which all the data for the chart comes. The range given here is interpreted by the chart as consecutive series.

<define name="chart-plot-area-attlist" combine="interleave">

<optional>

<attribute name="table:cell-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</optional>

</define>

If the first row or column, or both contains labels, this is stated by the chart:data-source-has-labels attribute.

<define name="chart-plot-area-attlist" combine="interleave">

<optional>

<attribute name="chart:data-source-has-labels" a:defaultValue="none">

<choice>

<value>none</value>

<value>row</value>

<value>column</value>

<value>both</value>

</choice>

</attribute>

</optional>

</define>

The chart:series-source formatting property specified in section 15.34.1 determines whether the data table contains the data series in column-wise or row-wise fashion.

### 3D Plot Area

The plot area may be displayed as an 3D scene as specified in section 9.4.1. All 3D attributes that can be applied to the <dr3d:scene> element can be applied to the <chart:plot-area> element, including the dr3d:transform attribute. It represents the rotation of a chart scene, that is the three-dimensional plot area. See section 9.4.1 for more information. In addition to this, the <chart:plot-area> element may contain a <dr3d:light> element as specified in section 9.4.2.

<define name="chart-plot-area-attlist" combine="interleave">

<ref name="dr3d-scene-attlist"/>

<ref name="common-dr3d-transform-attlist"/>

</define>

## Wall

The <chart:wall> element can be contained in the <chart:plot-area> element. It specifies a chart's wall. For two-dimensional charts, the wall spans the entire plot area. For three-dimensional charts, the wall usually consists of two perpendicular rectangles.

<define name="chart-wall">

<element name="chart:wall">

<ref name="chart-wall-attlist"/>

<empty/>

</element>

</define>

#### Width

The svg:width attributes specifies the width of the wall for three-dimensional charts.

<define name="chart-wall-attlist" combine="interleave">

<optional>

<attribute name="svg:width">

<ref name="length"/>

</attribute>

</optional>

</define>

#### Style

The <chart:wall> element may have a chart:style-name attribute to specify further styling information. They style may contain fill and stroke properties. See sections 15.14 and 15.13 for more information.

<define name="chart-wall-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

## Floor

The <chart:floor> element can be contained in the <chart:plot-area> element. For three-dimensional charts, the <chart:floor> element is present in addition to the <chart:wall> element.

<define name="chart-floor">

<element name="chart:floor">

<ref name="chart-floor-attlist"/>

<empty/>

</element>

</define>

#### Size

The size of the floor is determined in respect of the size of the plot area, which is always a two-dimensional rectangle that serves as a bounding rectangle of the three-dimensional scene. The svg:width attribute can be used to set the width of the floor.

<define name="chart-floor-attlist" combine="interleave">

<optional>

<attribute name="svg:width">

<ref name="length"/>

</attribute>

</optional>

</define>

#### Style

The <chart:floor> element may have a chart:style-name attribute to specify further styling information. Fill and stroke properties can be applied to a floor. See sections 15.14 and 15.13 for more information.

<define name="chart-floor-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

## Axis

The <chart:axis> element mainly contains style information, in particular scaling information. Chart data is usually structured as follows:

* Several data series each consisting of a name, for example, the name of a company.
* Values, for example, the yield of the company in different years.
* One value in each series belongs to a category, for example, the year.

<define name="chart-axis">

<element name="chart:axis">

<ref name="chart-axis-attlist"/>

<optional>

<ref name="chart-title"/>

</optional>

<optional>

<ref name="chart-categories"/>

</optional>

<zeroOrMore>

<ref name="chart-grid"/>

</zeroOrMore>

</element>

</define>

#### Dimension

The chart:dimension attribute specifies along which physical axis on the chart the values of the current axis are displayed.

A chart may contain more than one axis with the same dimension. For example, it may have two axes with dimension y. Data series may be attached to either axis. This way, data may be grouped for different scaling. To attach a specific axis to a data series, the axis has to be referenced by the <chart:series> element's chart:axis-name attribute. If an axis is not references by a data series, it becomes a copy of an existing axis with the same dimension.

The position of an axis in a chart is determined by the rendering application and depends on the chart type. In a chart with horizontal bars, the rendering application usually paints the axis with dimension x on the bottom of the plot area. If there are two axes with dimension y, a rendering application might paint the second axis at the top of the plot area.

<define name="chart-axis-attlist" combine="interleave">

<attribute name="chart:dimension">

<choice>

<value>x</value>

<value>y</value>

<value>z</value>

</choice>

</attribute>

</define>

#### Name

The chart:name attribute can be used to assign a name to this axis, so it can be referenced from e.g., a data series.

<define name="chart-axis-attlist" combine="interleave">

<optional>

<attribute name="chart:name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Style

A chart:style-name attribute can be associated with an axis. Stroke properties can be applied to axes; see section 15.13. These properties affect all lines of the axis object. Text properties can also be applied to axes; see section 15.4. These properties affect the appearance of all text objects. The axis properties described in section 15.31 can also be used.

The chart style that is referenced by the chart:style-name attribute may specify a data style that is used to format the axis' labels. See section 14.1 for details.

<define name="chart-axis-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

Example: Bar chart

In this example, there are two axes with dimension y. One of these axes has the name primary-value. A data series has been attached to that named axis. There is no data attached to the second axis, therefore an axis name has not been specified, and the axis is just a copy of the first one.

<chart:chart chart:class="bar">

<chart:title>

<text:p>Title of my chart</text:p>

</chart:title>

<chart:plot-area>

<chart:axis chart:dimension="x"  
 chart:axis-name="x"/>

<chart:axis chart:dimension="y"  
 chart:axis-name="primary-value"/>

<chart:axis chart:dimension="y"/>

<chart:series chart:values-address="Sheet1.A1:.A7"  
 chart:attached-axis="primary-value"/>  
 </chart:plot-area>

</chart:chart>

### Grid

The <chart:grid> element can be contained in a <chart:axis> element. It adds a grids to the axis.

<define name="chart-grid">

<element name="chart:grid">

<ref name="chart-grid-attlist"/>

</element>

</define>

#### Class

The chart:class attribute specifies whether major or minor tick marks are used. If a major grid is applied to an axis, the major tick marks are extended to grid lines. If a grid is minor, any minor tick marks assigned to the axis are used.

<define name="chart-grid-attlist" combine="interleave">

<optional>

<attribute name="chart:class" a:defaultValue="major">

<choice>

<value>major</value>

<value>minor</value>

</choice>

</attribute>

</optional>

</define>

#### Style Name

The <chart:grid> element may have a chart:style-name attribute to specify further styling information. Stroke properties can be applied to grids, which affect the lines of the grid. See section 15.13 for information on these stroke properties.

<define name="chart-grid-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

## Series

The <chart:series> element represents a data series in a chart. If the chart requires more input data like scatter and bubble charts, <chart:domain> sub-elements must be defined that mainly contain the cell-range-address of the corresponding data.

<define name="chart-series">

<element name="chart:series">

<ref name="chart-series-attlist"/>

<zeroOrMore>

<ref name="chart-domain"/>

</zeroOrMore>

<optional>

<ref name="chart-mean-value"/>

</optional>

<optional>

<ref name="chart-regression-curve"/>

</optional>

<optional>

<ref name="chart-error-indicator"/>

</optional>

<zeroOrMore>

<ref name="chart-data-point"/>

</zeroOrMore>

</element>

</define>

#### Cell Range

The chart:values-cell-range-address attribute allows a range to be specified that contains the values that should be visualized by this data series.

<define name="chart-series-attlist" combine="interleave">

<optional>

<attribute name="chart:values-cell-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</optional>

</define>

The chart:label-cell-address attribute allows a name to be provided for the series.

<define name="chart-series-attlist" combine="interleave">

<optional>

<attribute name="chart:label-cell-address">

<ref name="cellAddress"/>

</attribute>

</optional>

</define>

#### Class

The chart:class attribute can be used to assign a chart type to be used for rendering the data of this <chart:series> element. A chart:class attribute for a <chart:series> element overrides the chart:class attribute for the entire chart. This allows the creation of charts with multiple sub-charts, e.g., a bar chart with one or more data series rendered as lines. For more information on the available chart classes, see section 10.2.

<define name="chart-series-attlist" combine="interleave">

<optional>

<attribute name="chart:class">

<ref name="namespacedToken"/>

</attribute>

</optional>

</define>

#### Attached Axis

The chart:attached-axis attribute can be used to assign the data series to a <chart:axis> element.

<define name="chart-series-attlist" combine="interleave">

<optional>

<attribute name="chart:attached-axis">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Style Name

Styling attributes for the data series can be assigned through the chart:style-name attribute. Fill and stroke properties may be applied for <chart:series> element, see sections 15.14 and 15.13 for information. Text properties can also be applied to the descriptive text underneath the series, see section 15.4 for information.

<define name="chart-series-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

### Domain

For scatter and bubble charts, one ore more <chart:domain> elements must be specified for the <chart:series> elements.

For scatter charts, one <chart:domain> element is required. Its cell-range-address attribute references the x coordinate values for the scatter chart.

For bubble charts, two <chart:domain> elements are required. Their cell-range-address attributes reference the x and y coordinate values for the bubble chart

For both chart types, there must be at least one <chart:series> element with the necessary number of <chart:domain> sub-elements. All other <chart:series> elements can omit these. In this case, the first domain that is specified is used.

<define name="chart-domain">

<element name="chart:domain">

<optional>

<attribute name="table:cell-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</optional>

</element>

</define>

## Categories

The element <chart:categories> element represents the range of cell addresses that contains the captions for the categories contained in each series.

The element may contain a table:cell-range-address that denotes the region from which the category labels are taken from. If this attribute or the <chart:categories> element is omitted the application will evaluate the chart:data-source-has-labels attribute.

<define name="chart-categories">

<element name="chart:categories">

<optional>

<attribute name="table:cell-range-address">

<ref name="cellRangeAddress"/>

</attribute>

</optional>

</element>

</define>

## Data Point

If a single data point in a data series should have a specific appearance, the <chart:data-point> element is used to apply the required properties.

<define name="chart-data-point">

<element name="chart:data-point">

<ref name="chart-data-point-attlist"/>

<empty/>

</element>

</define>

#### Repetition

The chart:repeated attribute serves as a simplification if more than one consecutive data-points have the same properties. For example, the following XML-fragments have an identical meaning:

<chart:series chart:style-name="ch9">

<chart:data-point/>

<chart:data-point/>

<chart:data-point/>

<chart:data-point/>

</chart:series>

and

<chart:series chart:style-name="ch9">

<chart:data-point chart:repeated="4"/>

</chart:series>

<define name="chart-data-point-attlist" combine="interleave">

<optional>

<attribute name="chart:repeated">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

#### Style

The chart:style-name attribute referenced a chart style. Fill and stroke properties can be applied to each data point object, see sections 15.14 and 15.13. Text properties can also be applied to the descriptive text located underneath the data points, see section 15.4.

<define name="chart-data-point-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

## Mean Value

The formatting properties of the mean-value line are stored in the <chart:mean-value> element, which may be part of a <chart:series> element.

<define name="chart-mean-value">

<element name="chart:mean-value">

<ref name="chart-mean-value-attlist"/>

<empty/>

</element>

</define>

#### Style Name

The chart:style-name attribute references a chart style that contains the formatting properties for the mean-value line.

<define name="chart-mean-value-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

## Error Indicator

The formatting properties of error-indicators are stored in the <chart:error-indicator> elements which may be part of a series.

<define name="chart-error-indicator">

<element name="chart:error-indicator">

<ref name="chart-error-indicator-attlist"/>

<empty/>

</element>

</define>

#### Style Name

The chart:style-name attribute references a chart style that contains the formatting properties for the error indicator.

<define name="chart-error-indicator-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

## Regression Curves

The formatting properties of regression-lines are stored in the <chart:regression-curve> elements which may be part of a series.

<define name="chart-regression-curve">

<element name="chart:regression-curve">

<ref name="chart-regression-curve-attlist"/>

<empty/>

</element>

</define>

#### Style Name

The chart:style-name attribute referenced a chart style that contains the formatting properties for the error indicator. The chart style especially may contain the regression type property specified in section 15.35.1.

<define name="chart-regression-curve-attlist" combine="interleave">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

### Stock Chart Markers

The properties of a stock chart, i.e., the different colors for filling the candlestick-bars or the line-styles of the lines pointing to the high and low values (the range-line), are stored in separate elements.

The candlestick-bars for stocks that have a higher close-value than open-value take their formatting from the <chart:stock-gain-marker> element's properties, whereas stocks which close value is lower than the open-value, use the properties stored in <chart:stock-loss-marker>.

<define name="chart-stock-gain-marker">

<element name="chart:stock-gain-marker">

<ref name="common-stock-marker-attlist"/>

</element>

</define>

<define name="chart-stock-loss-marker">

<element name="chart:stock-loss-marker">

<ref name="common-stock-marker-attlist"/>

</element>

</define>

<define name="chart-stock-range-line">

<element name="chart:stock-range-line">

<ref name="common-stock-marker-attlist"/>

</element>

</define>

#### Style Name

The chart:style-name attribute referenced a chart style that contains the formatting properties for stock markers.

<define name="common-stock-marker-attlist">

<optional>

<attribute name="chart:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

1. Form Content

A form is a container for user interface controls which a user interacts with. For example, buttons, text boxes, check boxes, and drop-down lists are user interface controls that can be contained in a form. In the XML file format, the following basic rules apply to user interface controls and forms:

* All controls must be located in a form.
* All controls that are not hidden have to be associated with an absolute or relative position. These visual aspects of the control are represented by drawing shapes that contain a reference to the control. See section 9.2.12 for details.
* Forms may be nested.
* Forms are not connected with the text flow and layout of a document. This does not apply to controls.
* Forms can be data-aware. The controls reflect the content of a database.

Forms define rules for the following form behavior:

* Submitting the form, which is similar to [HTML4].

Note: Form submission is only supported for non nested forms that contain only controls that can be converted to HTML.

* Connecting to a data source. When this happens, the controls in a form become data-aware.
* Submitting and binding according to the [XForms] data model.

Forms are contained in the <office:forms> section of an XML document. This element may contain an arbitrary sequence of <form:form> or <xforms:model> elements. Note that controls are always declared inside a <form:form> element, while an <xforms:model> element contains only the XForms data model. Thus, the <office:forms> element may contain only <form:form> elements but no <xforms:model> element, while an <xforms:model> would typically be accompanied by an additional <form:form> element.

<define name="office-forms">

<optional>

<element name="office:forms">

<ref name="office-forms-attlist"/>

<zeroOrMore>

<choice>

<ref name="form-form"/>

<ref name="xforms-model"/>

</choice>

</zeroOrMore>

</element>

</optional>

</define>

For ease of use when using (filling out) forms, applications may focus controls initially so that the user can immediately type into the first form control. To achieve this behavior, the form:automatic-focus flag may be set to true.

<define name="office-forms-attlist" combine="interleave">

<optional>

<attribute name="form:automatic-focus" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

Application which support both creation and usage (filling out) of forms, the form:apply-design-mode flag determines whether the application is supposed to present the forms in this document in editable or fill-out state.

<define name="office-forms-attlist" combine="interleave">

<optional>

<attribute name="form:apply-design-mode" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## Form

The <form:form> element represents a user interface form and defines the contents and properties of the form.

This element is contained in either an <office:forms> or a <form:form> element. It contains the controls and sub forms of the form, a <form:properties> element which defines the properties of the form, and an <office:events-listeners> element that contains the events for the form.

<define name="form-form">

<element name="form:form">

<ref name="common-form-control-attlist"/>

<ref name="form-form-attlist"/>

<optional>

<ref name="form-properties"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

<zeroOrMore>

<choice>

<ref name="controls"/>

<ref name="form-form"/>

</choice>

</zeroOrMore>

<optional>

<ref name="form-connection-resource"/>

</optional>

</element>

</define>

The attributes that may be associated with the <form:form> are as follows:

* Name. See section 11.4.
* Service name. See section 11.4.
* Action
* Target frame
* Method
* Encoding Type
* Allow deletes
* Allow inserts
* Allow updates
* Apply filter
* Command type
* Command
* Data source
* Master fields
* Detail fields
* Escape processing
* Filter
* Ignore result
* Navigation mode
* Order
* Tabbing cycle

### Action

The xlink:href attribute represents the IRI of the processing agent for the form.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onRequest">

<value>onRequest</value>

</attribute>

</optional>

</optional>

</define>

### Target Frame

The office:target-frame attribute specifies the target frame of the form.

This attribute can have one of the following values:

* \_self: The form replaces the content of the current frame.
* \_blank: The form is displayed in a new frame.
* \_parent: The form is displayed in the parent frame of the current frame.
* \_top: The form is displayed in the topmost frame, that is the frame that contains the current frame as a child or descendent but is not contained within another frame.
* A frame name: The form is displayed in the named frame. If the named frame does not exist, a new frame with that name is created.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="office:target-frame" a:defaultValue="\_blank">

<ref name="targetFrameName"/>

</attribute>

</optional>

</define>

### Method

The form:method attribute specifies the HTTP method to use to submit the data in the form to the server. The value of this attribute can be get or post. The default value is get. These values are not case sensitive.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:method" a:defaultValue="get">

<choice>

<value>get</value>

<value>post</value>

<ref name="string"/>

</choice>

</attribute>

</optional>

</define>

### Encoding Type

If the value of the form:method attribute is post, the form:enctype attribute specifies the content type used to submit the form to the server. The default value of this attribute is application/x-www-form-urlencoded. Other suitable MIME types are also acceptable.

See §17.3 of [HTML4] for more information.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:enctype"

a:defaultValue="application/x-www-form-urlencoded">

<ref name="string"/>

</attribute>

</optional>

</define>

### Allow Deletes

The form:allow-deletes attribute specifies whether or not data records can be deleted. It applies only if the form is data-aware.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:allow-deletes" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Allow Inserts

The form:allow-inserts attribute specifies whether or not new data records can be inserted. It applies only if the form is data-aware.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:allow-inserts" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Allow Updates

The form:allow-updates attribute specifies whether or not data records can be updated.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:allow-updates" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Apply Filter

The form:apply-filter attribute specifies whether or not filters should be applied to the form. See also the Filter attribute.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:apply-filter" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Command Type

The form:command-type attribute specifies the type of command to execute on the data source. The value of this attribute can be one of the following:

* table: The command contains a table name. The form retrieves all of the data in the table.
* query: The command contains the name of query. The form retrieves and executes the query.
* command : The command contains an SQL statement. The form executes the SQL statement.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:command-type" a:defaultValue="command">

<choice>

<value>table</value>

<value>query</value>

<value>command</value>

</choice>

</attribute>

</optional>

</define>

### Command

The form:command attribute specifies the command to execute on the data source.

The value is interpreted differently, depending to the value of the Command Type attribute of the form. It can be the name of a database table, the name of a query object or an SQL statement.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:command"/>

</optional>

</define>

### Data Source

The form:datasource attribute specifies the name of a data source to use for the form.

The value of this attribute can be one of the following:

* A URL specifying a database connection.
* A data source name that the office application can use to establish database connections.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:datasource">

<choice>

<ref name="anyURI"/>

<ref name="string"/>

</choice>

</attribute>

</optional>

</define>

### Master Fields

The form:master-fields attribute is used for nested data-aware forms. It specifies the names of the columns in the result set represented by the parent form. Usually, they denote the foreign key fields of the parent form. The values of the columns are used to parameterize the data for the nested form. Each time the parent form changes the current row, the nested form queries the database again based on the values of the master fields.

The attribute contains a comma separated list of field names.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:master-fields">

<ref name="string"/>

</attribute>

</optional>

</define>

### Detail Fields

The form:detail-fields attribute is used for nested database forms. It specifies the names of the columns in detail forms that are related to columns in the parent form. The columns are used as parameters in the command for the nested form to retrieve the details for a matching master form record.

This attribute contains a comma separated list of field names.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:detail-fields">

<ref name="string"/>

</attribute>

</optional>

</define>

### Escape Processing

If the value of the form:command-type attribute is command, the form:escape-processing attribute specifies whether or not the application processes the command before passing it to the database driver.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:escape-processing" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Filter

The form:filter attribute specifies a filter for the command to base the form on. No matter whether the form is based on a query, a table, or a command, the filter is always conjunctively added to any possible existing filter. The filter usually forms a SQL “WHERE” clause, without the “WHERE” keyword.

The form:apply-filter attribute specifies whether or not the filter is actually applies to the command.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:filter">

<ref name="string"/>

</attribute>

</optional>

</define>

### Ignore Result

The form:ignore-result attribute specifies whether or not to discard all results that are retrieved from the underlying data source. If true, a database-bound form will discard any data it queries from the database, and thus only inserting and editing of new records is available. Essentially, this allows a mode of operation where only new data can be inserted into a database.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:ignore-result" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Navigation Mode

The form:navigation-mode attribute specifies how the records in a database form are navigated.

The value of this attribute can be one of the following:

* none: A dedicated navigation bar is not provided by the user interface. The form must be navigated using the TAB and SHIFT/TAB keys on the keyboard.
* current: A navigation bar is provided and the navigation is performed on the current form.
* parent: A navigation bar is provided and the navigation is performed on the parent form of the current form.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:navigation-mode">

<ref name="navigation"/>

</attribute>

</optional>

</define>

<define name="navigation">

<choice>

<value>none</value>

<value>current</value>

<value>parent</value>

</choice>

</define>

### Order

The form:order attribute specifies a sort criteria for the command. No matter whether the form is based on a query, a table, or a command, the sorting is always conjunctively added to any possible existing sorting. The attribute value usually forms an SQL “ORDER BY” clause, without the “ORDER BY” keyword.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:order">

<ref name="string"/>

</attribute>

</optional>

</define>

### Tabbing Cycle

The form:tab-cycle attribute specifies how the application responds when the user presses the TAB key in the controls in a form. The behavior of the application depends on whether or not the form is bound to a data source.

The value of this attribute can be one of the following:

* records: If a user presses the TAB key in the last control of the form, the focus moves to the first control specified in the tab order of the same form, and moves the form to the next record.
* current: If a user presses the TAB key in the last control of the form, the focus moves to the first control specified in the tab order of the same form, while the record pointer of the form is not touched.
* page: If a user presses the TAB key in the last control of a form, the focus moves to the first control specified in the tab order for the next form.

<define name="form-form-attlist" combine="interleave">

<optional>

<attribute name="form:tab-cycle">

<ref name="tab-cycles"/>

</attribute>

</optional>

</define>

<define name="tab-cycles">

<choice>

<value>records</value>

<value>current</value>

<value>page</value>

</choice>

</define>

### Connection Resource

The <form:connection-resource> element specifies the source database by an [XLink]. Its xlink:href attribute either references a file containing a database, or it contains information on how to make a connection to a database, for instance a [JDBC] URL.

<define name="form-connection-resource">

<element name="form:connection-resource">

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<empty/>

</element>

</define>

## XForms Model

The form model described in section 11.1 implies a data model where each control defines a name-value-pair, with the name being determined by the control id and the value being editable through the control. No interaction between controls is possible (save for macro programming). For applications where this kind of form logic does not suffice, W3C has introduced XForms (see [XForms]), a standard for XML-based forms.

XForms is designed to be embedded in another XML format. It consists of two major parts, the XForms model which contains the form logic plus form data, and the XForms controls, which can be bound to a data model. In the OASIS Open Office 1.0 we embed the W3C XForms model as defined by the <xforms:model> element into the <office:forms> forms container. The controls (see 11.3) will be left as is, except that they receive an xforms:bind attribute, which allows to bind any OpenDocument control to a previously defined XForms model.

### XForms Model

We import the XForms model defined in [XForms]. In order to avoid duplication of the XForms schema here, we only specify the XForms model element and allow arbitrary content.

<define name="xforms-model">

<element name="xforms:model">

<ref name="anyAttListOrElements"/>

</element>

</define>

## Controls

Controls are used to interact with forms. Each control in a form is identified by a name, though the names must not necessarily be unique.

Controls are connected to a the surrounding document (and its text flow, if applicable) by binding them to a shape that acts as a placeholder for the control. See section 9.2.12 for details.

In addition to the attributes defined in this file format, controls may have application-specific additional attributes. These attributes are stored in the <form:properties> element in each control. Control events are specified in the <office:event-listeners> element.

When a user submits a form for processing, the names of some controls are paired with the current values of the controls and the pairs are submitted with the form. These controls are called successful controls. See section 17.13.2 of [HTML4]for more information.

The file format provides elements for the following standard controls:

* Text
* Text area
* Password
* File
* Formatted text
* Number
* Date
* Time
* Fixed text
* Combo box
* List box
* Button
* Image
* Check box
* Radio button
* Frame
* Image frame
* Hidden
* Grid

It is also possible to define application-specific controls. These controls are described by the <form:generic-control> element.

### Text

The <form:text> element defines a control for displaying and inputting text.

<define name="column-controls" combine="choice">

<element name="form:text">

<ref name="form-text-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="controls" combine="choice">

<ref name="column-controls"/>

</define>

<define name="form-text-attlist">

<ref name="form-control-attlist"/>

<ref name="common-current-value-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="common-maxlength-attlist"/>

<ref name="common-printable-attlist"/>

<ref name="common-readonly-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

<ref name="common-convert-empty-attlist"/>

<ref name="common-data-field-attlist"/>

</define>

<define name="form-control-attlist">

<ref name="common-form-control-attlist"/>

<ref name="common-control-id-attlist"/>

<ref name="xforms-bind-attlist"/>

</define>

<define name="common-form-control-content">

<optional>

<ref name="form-properties"/>

</optional>

<optional>

<ref name="office-event-listeners"/>

</optional>

</define>

The attributes that may be associated with the <form:text> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Current Value, Disabled, Maximum Length, Printable, Read only, Tab Index, Tab Stop, Title and Value. See section 11.5 for information about these attributes.
* Convert Empty and Data Field. See section 11.5.22 for information about these attributes.

### Text Area

The <form:textarea> element defines a control for displaying and inputting text on multiple lines.

The <form:textarea> element may be used with plain text values (specified by the form:current-value attribute) as well as with formatted text (specified as paragraph content). If both, the form:current-value and one or more <text:p> elements are present, it is up to the application reading the document to decide which information is used.

<define name="column-controls" combine="choice">

<element name="form:textarea">

<ref name="form-textarea-attlist"/>

<ref name="common-form-control-content"/>

<zeroOrMore>

<ref name="text-p"/>

</zeroOrMore>

</element>

</define>

<define name="form-textarea-attlist">

<ref name="form-control-attlist"/>

<ref name="common-current-value-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="common-maxlength-attlist"/>

<ref name="common-printable-attlist"/>

<ref name="common-readonly-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

<ref name="common-convert-empty-attlist"/>

<ref name="common-data-field-attlist"/>

</define>

The attributes that may be associated with the <form:textarea> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Current Value, Disabled, Maximum Length, Printable, Read only, Tab Index, Tab Stop, Title and Value. See section 11.5 for information about these attributes.
* Convert Empty and Data Field. See section 11.5.22 for information about these attributes.

### Password

The <form:password> element defines a control that hides the text that a user inputs using an echo character, for example, an asterisk. This type of control is usually used for inputting sensitive information such as a password.

<define name="controls" combine="choice">

<element name="form:password">

<ref name="form-password-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-password-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="common-maxlength-attlist"/>

<ref name="common-printable-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

<ref name="common-convert-empty-attlist"/>

</define>

The attributes that may be associated with the <form:password> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Disabled, Maximum Length, Printable, Tab Index, Tab Stop, Title and Value. See section 11.5 for information about these attributes.
* Echo Char

#### Echo Char

The form:echo-char attribute specifies the character that the form uses to mask the text which a user inputs in a password control.

<define name="form-password-attlist" combine="interleave">

<optional>

<attribute name="form:echo-char" a:defaultValue="\*">

<ref name="character"/>

</attribute>

</optional>

</define>

### File

The <form:file> element defines a control for selecting a file.

<define name="controls" combine="choice">

<element name="form:file">

<ref name="form-file-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-file-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-current-value-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="common-maxlength-attlist"/>

<ref name="common-printable-attlist"/>

<ref name="common-readonly-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

</define>

The attributes that may be associated with the <form:file> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Current Value, Disabled, Printable, Read only, Tab Index, Tab Stop, Title and Value. See section 11.5 for information about these attributes.

### Formatted Text

The <form:formatted-text> element defines a control for inputting formatted text, which follows a certain formatting in both input and display.

<define name="column-controls" combine="choice">

<element name="form:formatted-text">

<ref name="form-formatted-text-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-formatted-text-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-current-value-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="common-maxlength-attlist"/>

<ref name="common-printable-attlist"/>

<ref name="common-readonly-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

<ref name="common-convert-empty-attlist"/>

<ref name="common-data-field-attlist"/>

</define>

The attributes that may be associated with the <form:formatted-text> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Current Value, Disabled, Maximum Length, Printable, Read only, Tab Index, Tab Stop, Title and Value. See section 11.5 for information about these attributes.
* Convert Empty and Data Field. See section 11.5.22 for information about these attributes.
* Maximum Value
* Minimum Value
* Validation

#### Maximum Value

The form:max-value attribute specifies the maximum value that a user can enter.

<define name="form-formatted-text-attlist" combine="interleave">

<optional>

<attribute name="form:max-value">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Minimum Value

The form:min-value attribute specifies the minimum value that a user can enter.

<define name="form-formatted-text-attlist" combine="interleave">

<optional>

<attribute name="form:min-value">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Validation

The form:validation attribute specifies whether or not the text that the user enters is validated during input.

<define name="form-formatted-text-attlist" combine="interleave">

<optional>

<attribute name="form:validation" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Number

The <form:number> element describes a control which allows the user to enter a floating point number. The attributes that may be associated on this control are similar to those of the <form:formatted-text>, except that the data type is fixed to numeric data.

<define name="column-controls" combine="choice">

<element name="form:number">

<ref name="form-number-attlist"/>

<ref name="common-numeric-control-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="common-numeric-control-attlist">

<ref name="form-control-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="common-maxlength-attlist"/>

<ref name="common-printable-attlist"/>

<ref name="common-readonly-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-convert-empty-attlist"/>

<ref name="common-data-field-attlist"/>

</define>

The attributes that may be associated with the <form:number> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Disabled, Maximum Length, Printable, Read only, Tab Index, Tab Stop, Title and Value. See section 11.5 for information about these attributes.
* Convert Empty and Data Field. See section 11.5.22 for information about these attributes.
* Value and Current Value
* Minimum and Maximum Value

#### Value

The attributes for value and current value are the same as those for other fields, except that they can contain only floating point data.

<define name="form-number-attlist" combine="interleave">

<optional>

<attribute name="form:value">

<ref name="double"/>

</attribute>

</optional>

</define>

<define name="form-number-attlist" combine="interleave">

<optional>

<attribute name="form:current-value">

<ref name="double"/>

</attribute>

</optional>

</define>

#### Minimum and Maximum

The attributes for minimum and maximum value define the smallest and largest numerical values that are acceptable for this control.

<define name="form-number-attlist" combine="interleave">

<optional>

<attribute name="form:min-value">

<ref name="double"/>

</attribute>

</optional>

</define>

<define name="form-number-attlist" combine="interleave">

<optional>

<attribute name="form:max-value">

<ref name="double"/>

</attribute>

</optional>

</define>

### Date And Time

The controls for date and time are the same as those for number values, except that they accept date and time values, respectively. They support the same attributes as the numerical field, except for the different data types of their value attributes.

<define name="column-controls" combine="choice">

<element name="form:date">

<ref name="form-date-attlist"/>

<ref name="common-numeric-control-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="controls" combine="choice">

<element name="form:time">

<ref name="form-time-attlist"/>

<ref name="common-numeric-control-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

The attributes that may be associated with the <form:date> and <form:time> elements are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Disabled, Maximum Length, Printable, Read only, Tab Index, Tab Stop, Title and Value. See section 11.5 for information about these attributes.
* Convert Empty and Data Field. See section 11.5.22 for information about these attributes.
* Value and Current Value
* Minimum and Maximum Value

#### Value

The attributes for value and current value are the same as those for <form:number>, except that they can contain only date or time data, respectively.

<define name="form-date-attlist" combine="interleave">

<optional>

<attribute name="form:value">

<ref name="date"/>

</attribute>

</optional>

</define>

<define name="form-time-attlist" combine="interleave">

<optional>

<attribute name="form:value">

<ref name="time"/>

</attribute>

</optional>

</define>

<define name="form-date-attlist" combine="interleave">

<optional>

<attribute name="form:current-value">

<ref name="date"/>

</attribute>

</optional>

</define>

<define name="form-time-attlist" combine="interleave">

<optional>

<attribute name="form:current-value">

<ref name="time"/>

</attribute>

</optional>

</define>

#### Minimum and Maximum

The attributes for minimum and maximum value define the smallest and largest dates (or times) that are acceptable for this control.

<define name="form-date-attlist" combine="interleave">

<optional>

<attribute name="form:min-value">

<ref name="date"/>

</attribute>

</optional>

</define>

<define name="form-time-attlist" combine="interleave">

<optional>

<attribute name="form:min-value">

<ref name="time"/>

</attribute>

</optional>

</define>

<define name="form-date-attlist" combine="interleave">

<optional>

<attribute name="form:max-value">

<ref name="date"/>

</attribute>

</optional>

</define>

<define name="form-time-attlist" combine="interleave">

<optional>

<attribute name="form:max-value">

<ref name="time"/>

</attribute>

</optional>

</define>

### Fixed Text

The <form:fixed-text> element describes a control which attaches additional information to controls, or merely displays information in the application. Relations between a labeling and a labeled control can be established by specifying the form:for attribute of the label. Only one label may be associated with the same control.

<define name="controls" combine="choice">

<element name="form:fixed-text">

<ref name="form-fixed-text-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-fixed-text-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="for"/>

<ref name="common-disabled-attlist"/>

<ref name="label"/>

<ref name="common-printable-attlist"/>

<ref name="common-title-attlist"/>

</define>

The attributes that may be associated with the <form:fixed-text> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Disabled, For, Label, Printable, and Title. See section 11.5 for information about these attributes.
* Multi-Line

#### Multi-Line

The form:multi-line attribute specifies whether or not the label is displayed on multiple lines.

<define name="form-fixed-text-attlist" combine="interleave">

<optional>

<attribute name="form:multi-line" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Combo Box

The <form:combobox> element defines a control which allows displaying and editing of text, and containing a list of possible values for this text.

<define name="column-controls" combine="choice">

<element name="form:combobox">

<ref name="form-combobox-attlist"/>

<ref name="common-form-control-content"/>

<zeroOrMore>

<ref name="form-item"/>

</zeroOrMore>

</element>

</define>

<define name="form-combobox-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-current-value-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="dropdown"/>

<ref name="common-maxlength-attlist"/>

<ref name="common-printable-attlist"/>

<ref name="common-readonly-attlist"/>

<ref name="size"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

<ref name="common-convert-empty-attlist"/>

<ref name="common-data-field-attlist"/>

<ref name="list-source"/>

<ref name="list-source-type"/>

</define>

The attributes that may be associated with the <form:combobox> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Current Value, Disabled, Dropdown, Max Length, Printable, Read only, Size, Tab Index, Tab Stop, Title, and Value. See section 11.5 for information about these attributes.
* Convert Empty, Data Field, List Source, and List Source Type. See section 11.5.22 for information about these attributes.
* Automatic Completion

#### Automatic Completion

The form:auto-complete attribute specifies whether, when the user enters text in the combobox that matches one of the list items in the combobox, the application automatically completes the text for the user.

<define name="form-combobox-attlist" combine="interleave">

<optional>

<attribute name="form:auto-complete">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Item

The <form:item> element defines a list item for a combobox control.

<define name="form-item">

<element name="form:item">

<ref name="form-item-attlist"/>

<text/>

</element>

</define>

<define name="form-item-attlist" combine="interleave">

<ref name="label"/>

</define>

The attribute that may be associated associate with the <form:item> element is:

* Label. See section 11.5 for information about this attribute.

### List Box

The <form:listbox> element defines an input control that allows a user to select one or more items from a list. It is an alternative representation for a group of radio buttons.

<define name="column-controls" combine="choice">

<element name="form:listbox">

<ref name="form-listbox-attlist"/>

<ref name="common-form-control-content"/>

<zeroOrMore>

<ref name="form-option"/>

</zeroOrMore>

</element>

</define>

<define name="form-listbox-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="dropdown"/>

<ref name="common-printable-attlist"/>

<ref name="size"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="bound-column"/>

<ref name="common-data-field-attlist"/>

<ref name="list-source"/>

<ref name="list-source-type"/>

</define>

The attributes that may be associated with the <form:listbox> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Disabled, Dropdown, Printable, Read only, Size, Tab Index, Tab Stop, and Title. See section 11.5 for information about these attributes.
* Bound Column, Data Field, List Source, and List Source Type. See section 11.5.22 for information about these attributes.
* Multiple
* XForms source

#### Multiple

The form:multiple attribute determines whether or not a user can select multiple items from a list box.

<define name="form-listbox-attlist" combine="interleave">

<optional>

<attribute name="form:multiple" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### XForms source

The form:xforms-list-source allows to dynamically create the list of choices by binding the list content to XForms (see section 11.2, as well as [XForms]). The attribute references an <xforms:bind> element, and creates a list entry for each node in the node-set defined by that attribute.

<define name="form-listbox-attlist" combine="interleave">

<optional>

<attribute name="form:xforms-list-source">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Option

The <form:option> element defines the list items for a list box control. An item can be preselected and can contain a related value.

<define name="form-option">

<element name="form:option">

<ref name="form-option-attlist"/>

<text/>

</element>

</define>

<define name="form-option-attlist" combine="interleave">

<ref name="current-selected"/>

<ref name="selected"/>

<ref name="label"/>

<ref name="common-value-attlist"/>

</define>

The attributes that may be associated with the <form:option> element are:

* Current Selected, Selected, Label, and Value. See section 11.5 for information about these attributes.

### Button

The <form:button> element defines a button. When pressed, a button usually triggers an action.

<define name="controls" combine="choice">

<element name="form:button">

<ref name="form-button-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-button-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="button-type"/>

<ref name="common-disabled-attlist"/>

<ref name="label"/>

<ref name="image-data"/>

<ref name="common-printable-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="target-frame"/>

<ref name="target-location"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

<ref name="common-form-relative-image-position-attlist"/>

</define>

The attributes that may be associated with the <form:button> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Button Type, Control ID, Disabled, Image Data, Printable, Tab Index, Tab Stop, Target Frame, Target Location, Title, Value and relative image position. See section 11.5 for information about these attributes.
* Default Button
* Toggle
* Focus on Click
* XForms Submission

#### Default Button

The form:default-button attribute determines whether or not the button is the default button on the form. If a user clicks the default button or presses Return while an input control is focused, the application takes the same action.

If a form contains more than one default button, the behavior of the application is undefined.

<define name="form-button-attlist" combine="interleave">

<optional>

<attribute name="form:default-button" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Toggle

The attribute specifies whether a form button control, when it is operated (via mouse or keyboard), should be toggled between a "pressed" and a "not pressed" state. If this attribute is set to false, the button controls behaves like a push button.

<define name="form-button-attlist" combine="interleave">

<optional>

<attribute name="form:toggle" a:default-value="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Focus on click

The form:focus-on-click attribute specifies whether a form button control should grab the focus when it is clicked with the mouse.

<define name="form-button-attlist" combine="interleave">

<optional>

<attribute name="form:focus-on-click">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### XForms Submission

Buttons may be used to trigger an XForms submission by adding an form:xforms-submission attribute. If such a button is triggered, a previously declared XForms submission with the given name is executed.

<define name="form-button-attlist" combine="interleave">

<optional>

<attribute name="form:xforms-submission">

<ref name="string"/>

</attribute>

</optional>

</define>

### Image

The <form:image> element defines a graphical button control. This element corresponds to the input element of type image in HTML 4.01. Note: HTML 4.01 only allows the button type to be “submit” for an image button. In office application file format, an image button can be of any type.

<define name="controls" combine="choice">

<element name="form:image">

<ref name="form-image-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-image-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="button-type"/>

<ref name="common-disabled-attlist"/>

<ref name="image-data"/>

<ref name="common-printable-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="target-frame"/>

<ref name="target-location"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

</define>

The attributes that may be associated with the <form:image> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Button Type, Control ID, Disabled, Image Data, Printable, Tab Index, Tab Stop, Target Frame, Target Location, Title, and Value. See section 11.5 for information about these attributes.

### Check Box

The <form:checkbox> element defines an on/off control which a user can toggle. The control is on when the value of the form:current-state attribute associated with the control element is checked. When a user submits a form, only the controls whose current state is checked are successful.

<define name="column-controls" combine="choice">

<element name="form:checkbox">

<ref name="form-checkbox-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-checkbox-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="label"/>

<ref name="common-printable-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

<ref name="common-data-field-attlist"/>

<ref name="common-form-visual-effect-attlist"/>

<ref name="common-form-relative-image-position-attlist"/>

</define>

The attributes that may be associated with the <form:checkbox> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Disabled, Label, Printable, Tab Index, Tab Stop, Title, Value, Visual Effect and Relative Image Position. See section 11.5 for information about these attributes.
* Data Field. See section 11.5.22 for information about this attribute.
* Current State
* Is Tristate
* State

#### Current State

The form:current-state attribute specifies the current state of the check box control.

The value of this attribute can be one of the following:

* unchecked: The check box is not checked.
* checked: The check box is checked. The value of the control is submitted with the form.
* unknown: This value is only available when the control is in tristate mode (See the "Is Tristate" attribute) . This value may, for instance, be used in connection with a database field binding to indicate that the value is NULL.

<define name="states">

<choice>

<value>unchecked</value>

<value>checked</value>

<value>unknown</value>

</choice>

</define>

<define name="form-checkbox-attlist" combine="interleave">

<optional>

<attribute name="form:current-state">

<ref name="states"/>

</attribute>

</optional>

</define>

#### Is Tristate

The form:is-tristate attribute specifies that the check box can have three states instead of the common two states.

<define name="form-checkbox-attlist" combine="interleave">

<optional>

<attribute name="form:is-tristate" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### State

The form:state attribute specifies the default state of the check box control. This state is used to initialize the control.

<define name="form-checkbox-attlist" combine="interleave">

<optional>

<attribute name="form:state" a:defaultValue="unchecked">

<ref name="states"/>

</attribute>

</optional>

</define>

### Radio Button

The <form:radio> element describes controls which act like check boxes except that when several radio buttons share the same control name they are mutually exclusive. When one button is on, all of the other buttons with the same name are off. If no radio button is initially on, the way in which the application chooses which button to turn on initially is undefined.

If a group of radio buttons is bound to one database field, the reference value of the selected radio button is written into the database field.

<define name="controls" combine="choice">

<element name="form:radio">

<ref name="form-radio-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-radio-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="current-selected"/>

<ref name="common-disabled-attlist"/>

<ref name="label"/>

<ref name="common-printable-attlist"/>

<ref name="selected"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

<ref name="common-data-field-attlist"/>

<ref name="common-form-visual-effect-attlist"/>

<ref name="common-form-relative-image-position-attlist"/>

</define>

The attributes that may be associated with the <form:radio> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Current Selected, Disabled, Label, Printable, Selected, Tab Index, Tab Stop, Title, Value, Visual Effect and Relative Image Position. See section 11.5 for information about these attributes.
* Data Field. See section 11.5.22 for information about this attribute.

### Frame

The <form:frame> element defines a frame, which may be used to arrange controls visually. This element does not have a value and it does not allow any user input.

<define name="controls" combine="choice">

<element name="form:frame">

<ref name="form-frame-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-frame-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="for"/>

<ref name="label"/>

<ref name="common-printable-attlist"/>

<ref name="common-title-attlist"/>

</define>

The attributes that may be associated with the <form:frame> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Disabled, For, Label, Printable, and Title. See section 11.5 for information about these attributes.

### Image Frame

The <form:image-frame> element defines a graphical control. The control displays an image, whose location is described in the control.

<define name="controls" combine="choice">

<element name="form:image-frame">

<ref name="form-image-frame-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-image-frame-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="image-data"/>

<ref name="common-printable-attlist"/>

<ref name="common-readonly-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-data-field-attlist"/>

</define>

The attributes that may be associated with the <form:image-frame> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Disabled, Image Data, Printable, Read only, and Title. See section 11.5 for information about these attributes.
* Data Field. See section 11.5.22 for information about this attribute.

### Hidden

The <form:hidden> element defines a control that does not have a visual representation. This element is usually used as a container for information.

<define name="controls" combine="choice">

<element name="form:hidden">

<ref name="form-hidden-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-hidden-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-value-attlist"/>

</define>

The attributes that may be associated with the <form:hidden> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Value. See section 11.5 for information about this attribute.

### Grid

The <form:grid> element defines a control that displays table data. This control is data-aware and is bound to a form which retrieves data from a data source. The actual data to display in a grid control is determined by the parent form, which is data-aware and thus based on a certain row set. The rows in the grid contain these data rows.

Each column in the grid is specified by a <form:column> element. Each column is bound to a field in the form's row set.

<define name="controls" combine="choice">

<element name="form:grid">

<ref name="form-grid-attlist"/>

<ref name="common-form-control-content"/>

<zeroOrMore>

<ref name="form-column"/>

</zeroOrMore>

</element>

</define>

<define name="form-grid-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="common-printable-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

</define>

The attributes that may be associated with the <form:grid> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Disabled, Printable, Tab Index, Tab Stop, and Title. See section 11.5 for information about these attributes.

#### Column

The <form:column> element defines a column in a grid control. The column contains a control that displays the grid data for the column.

<define name="form-column">

<element name="form:column">

<ref name="form-column-attlist"/>

<oneOrMore>

<ref name="column-controls"/>

</oneOrMore>

</element>

</define>

<define name="form-column-attlist" combine="interleave">

<ref name="common-form-control-attlist"/>

<ref name="label"/>

<ref name="text-style-name"/>

</define>

The attributes that may be associated with the <form:column> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Label. See section 11.5 for information about this attribute.
* Column Style

#### Column Style

The form:text-style-name attribute specifies paragraph style that is applied to all controls with the column. See also section 9.2.12. Unlike other paragraph styles, this style may reference a data style.

<define name="text-style-name">

<optional>

<attribute name="form:text-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

### Value Range

The new <form:value-range> element defines a control which allows the user to select a value from a continuous number range. Possible representations include scroll bars and spin buttons.

<define name="controls" combine="choice">

<element name="form:value-range">

<ref name="form-value-range-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-value-range-attlist" combine="interleave">

<ref name="form-control-attlist"/>

<ref name="common-disabled-attlist"/>

<ref name="common-printable-attlist"/>

<ref name="common-tab-attlist"/>

<ref name="common-title-attlist"/>

<ref name="common-value-attlist"/>

</define>

The attributes that may be associated with a <form:value-range> element are:

* Name and Service Name. See section 11.4 for information about these attributes.
* Control ID, Current Value, Disabled, Printable, Read only, Tab Index, Tab Stop, Title and Value. See section 11.5 for information about these attributes.
* Maximum Value
* Minimum Value
* Step Size
* Page Step Size
* Repeat Delay
* Orientation

#### Maximum Value

The form:max-value attribute specifies the maximum value that a user can enter.

<define name="form-value-range-attlist" combine="interleave">

<optional>

<attribute name="form:max-value">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Minimum Value

The form:min-value attribute specifies the minimum value that a user can enter.

<define name="form-value-range-attlist" combine="interleave">

<optional>

<attribute name="form:min-value">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Step Size

The form:step-size attribute specifies the increment to be used for a control representing a value.

<define name="form-value-range-attlist" combine="interleave">

<optional>

<attribute name="form:step-size" a:defaultName="1">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

#### Page Step Size

The form:page-step-size attribute specifies a second-level increment to be used for a control representing a value. In the user interface, this is usually associated with the user pressing the "Page Up" or "Page Down" key.

<define name="form-value-range-attlist" combine="interleave">

<optional>

<attribute name="form:page-step-size">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

#### Repeat Delay

The form:delay-for-repeat attribute specifies a time-out to be used before a pressed mouse button results in repeating an action.

<define name="form-value-range-attlist" combine="interleave">

<optional>

<attribute name="form:delay-for-repeat">

<ref name="duration"/>

</attribute>

</optional>

</define>

#### Orientation

The form:orientation attribute specifies the orientation of the control, which could be either horizontal or vertical.

<define name="form-value-range-attlist" combine="interleave">

<optional>

<attribute name="form:orientation">

<choice>

<value>horizontal</value>

<value>vertical</value>

</choice>

</attribute>

</optional>

</define>

### Generic Control

The <form:generic-control> element defines a placeholder for a generic control. The generic control can contain any properties and any events. The application detects the type of the control and instantiates the correct control.

<define name="controls" combine="choice">

<element name="form:generic-control">

<ref name="form-generic-control-attlist"/>

<ref name="common-form-control-content"/>

</element>

</define>

<define name="form-generic-control-attlist" combine="interleave">

<ref name="form-control-attlist"/>

</define>

The attributes that may be associated with the <form:generic-control> element are:

* Name and Service Name. See section 11.4 for information about these attributes.

## Common Form and Control Attributes

### Name

The form:name attribute specifies the name of the form or control element. This may be used to give a form or control element an identity, which is important for scripting and for submitting the content of controls.

<define name="common-form-control-attlist" combine="interleave">

<optional>

<attribute name="form:name">

<ref name="string"/>

</attribute>

</optional>

</define>

### Control Implementation

A control may be given a control type attribute, which determines which concrete rendition or implementation the user agent should instantiate. For easy extensibility, the value of this attribute is a namespaced token, i.e., it is token using a namespace prefix, much like attributes in XML.

<define name="common-form-control-attlist" combine="interleave">

<optional>

<attribute name="form:control-implementation">

<ref name="namespacedToken"/>

</attribute>

</optional>

</define>

### Bind to XForms

Any control can be bound to an XForms form (see section 11.2, as well as [XForms]) by using the xforms:bind attribute. With buttons the bind attribute refers to an <xforms:submission> element with the given ID. Pushing the button causes the appropriate XForms submission action to be performed. For all other control types, the xforms:bind attribute refers to an <xforms:bind> element with the given ID. Any such bound control reads and writes its data as determined by the appropriate bind element.

<define name="xforms-bind-attlist">

<optional>

<attribute name="xforms:bind">

<ref name="string"/>

</attribute>

</optional>

</define>

## Common Control Attributes

### Button Type

The form:button-type attribute specifies the type of a button. This attribute is supported for the following elements:

* <form:button>
* <form:image>

The value of this attribute can be one of the following:

* submit: Pressing the button submits the form.
* reset: Pressing the button resets every control in the form to its default value.
* push: Pressing the button does not perform any action by default. The use then can add scripts to the button. and the script is run when the button is pressed.
* url: Pressing the button loads the URL that is specified in the form:target-url attribute.

<define name="types">

<choice>

<value>submit</value>

<value>reset</value>

<value>push</value>

<value>url</value>

</choice>

</define>

<define name="button-type">

<optional>

<attribute name="form:button-type" a:defaultValue="push">

<ref name="types"/>

</attribute>

</optional>

</define>

### Control ID

All controls except Hidden Controls have a visual representation in the host document. Thus, they need an absolute or relative position, describing the location in the document. The position is represented by a shape that contains a reference to the control element within the form element.

The form:id attribute is used to uniquely identify a control element. Every control that is not hidden must have such an attribute associated with it, which in turn can be used to reference the control.

This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:password>
* <form:file>
* <form:formatted-text>
* <form:fixed-text>
* <form:combobox>
* <form:listbox>
* <form:button>
* <form:image>
* <form:checkbox>
* <form:radio>
* <form:frame>
* <form:image-frame>
* <form:grid>

<define name="common-control-id-attlist">

<attribute name="form:id">

<ref name="ID"/>

</attribute>

</define>

### Current Selected

The form:current-selected attribute determines the current state of a radio button or option element.

This attribute is supported for the following elements:

* <form:option>
* <form:radio>

<define name="current-selected">

<optional>

<attribute name="form:current-selected" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Value and Current Value

Every control has a default value and a current value. The current value changes with user interaction; the default value of a control does not. In general, the default value is specified in a form:value attribute.

The default value is used during special events, such as resetting the form, which transfers the default value of every control to its current value. If a control does not have a default value, the result of resetting the form is undefined.

Besides storing the current value together with the control, it is also possible to bind controls to other value providers, which act as value sink and source, such as database fields (in data-aware forms) or e.g., cells in a spreadsheet document the controls live in. In this case, the current value is not stored with the control itself, but in the external instance, which may or may not store it together with the document. See section 11.5.22 for more details on database properties.

#### Default Value

The form:value attribute specifies the default value of an input control. This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:password>
* <form:file>
* <form:formatted-text>
* <form:combobox>
* <form:option>
* <form:button>
* <form:image>
* <form:checkbox>
* <form:radio>
* <form:hidden>

<define name="common-value-attlist">

<optional>

<attribute name="form:value">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Current Value

The form:current-value attribute specifies the current status of an input control. It overrides the value of a form:value attribute, if one is present.

This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:file>
* <form:formatted-text>
* <form:combobox>

<define name="common-current-value-attlist">

<optional>

<attribute name="form:current-value">

<ref name="string"/>

</attribute>

</optional>

</define>

### Disabled

The form:disabled attribute specifies whether or not a control can accept user input. This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:password>
* <form:file>
* <form:formatted-text>
* <form:fixed-text>
* <form:combobox>
* <form:listbox>
* <form:button>
* <form:image>
* <form:checkbox>
* <form:radio>
* <form:frame>
* <form:image-frame>
* <form:grid>

Controls that are disabled are not included in the tabbing navigation sequence and can not be focused.

<define name="common-disabled-attlist">

<optional>

<attribute name="form:disabled" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Dropdown

The form:dropdown attribute specifies whether the list in a combo box or list box is always visible or is only visible when the user clicks the drop-down button. This attribute is supported for the following elements:

* <form:combobox>
* <form:listbox>

If the value is true, the list is always visible. If the value is false, the list is only visible when the user clicks the drop-down button.

<define name="dropdown">

<optional>

<attribute name="form:dropdown" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### For

The form:for attribute specifies the IDs of the controls with which control element is labeling. This attribute is supported for the following elements:

* <form:fixed-text>
* <form:frame>

This attribute contains a comma separated list of control IDs.

<define name="for">

<optional>

<attribute name="form:for">

<ref name="string"/>

</attribute>

</optional>

</define>

### Image Data

The form:image-data attribute links the control to an external file containing image data. This attribute is supported for the following elements:

* <form:button>
* <form:image>
* <form:image-frame>

<define name="image-data">

<optional>

<attribute name="form:image-data">

<ref name="anyURI"/>

</attribute>

</optional>

</define>

### Label

The form:label attribute contains a label for a control such as a radio button or check box. This attribute is supported for the following elements:

* <form:fixed-text>
* <form:item>
* <form:option>
* <form:checkbox>
* <form:radio>
* <form:frame>
* <form:column>

<define name="label">

<optional>

<attribute name="form:label">

<ref name="string"/>

</attribute>

</optional>

</define>

### Maximum Length

The form:max-length attribute specifies the maximum number of characters that a user can enter in an input control. This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:password>
* <form:formatted-text>
* <form:combobox>

The default value of this attribute is unlimited, which allows a user to enter an unlimited number of characters.

<define name="common-maxlength-attlist">

<optional>

<attribute name="form:max-length">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Printable

The form:printable attribute specifies whether or not a control is printed when a user prints the document in which the control is contained. This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:password>
* <form:file>
* <form:formatted-text>
* <form:fixed-text>
* <form:combobox>
* <form:listbox>
* <form:button>
* <form:image>
* <form:checkbox>
* <form:radio>
* <form:frame>
* <form:image-frame>
* <form:grid>

<define name="common-printable-attlist">

<optional>

<attribute name="form:printable" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Read only

The form:readonly attribute specifies whether or not a user can modify the value of a control. This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:file>
* <form:formatted-text>
* <form:combobox>
* <form:listbox>
* <form:image-frame>

Read-only controls are included in the tabbing navigation sequence.

<define name="common-readonly-attlist">

<optional>

<attribute name="form:readonly" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Selected

The form:selected attribute specifies the default state of a radio button or option. When the control is initialized, it is in the default state specified by this attribute. This attribute is supported for the following elements:

* <form:option>
* <form:radio>

In a group of radio buttons that share the same name, only one radio button can have this attribute set to true.

<define name="selected">

<optional>

<attribute name="form:selected" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Size

The form:size attribute specifies the number of rows that are visible at a time in a combo box list or a list box list. This attribute is supported for the following elements:

* <form:combobox>
* <form:listbox>

<define name="size">

<optional>

<attribute name="form:size">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Tab Index

The form:tab-index attribute specifies the tabbing navigation order of a control within a form. The tabbing order is the order in which controls are given focus when a user navigates through the form using the TAB key on the keyboard. The tabbing order can include elements that are nested in other elements. This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:password>
* <form:file>
* <form:formatted-text>
* <form:combobox>
* <form:listbox>
* <form:button>
* <form:image>
* <form:checkbox>
* <form:radio>
* <form:grid>

The rules for tabbing are similar to the tabbing rules used in HTML 4.0.

Controls that can be given focus are navigated in the order described in the following rules:

1. The controls that have a positive value for the form:tab-index attribute are navigated first.
2. The navigation starts at the control with lowest form:tab-index value and ends at the control with the highest value. Values do not have to be sequential and they do not have to begin with a particular value.
3. Controls that have the same values for the form:tab-index attribute are navigated according their position in the form.
4. Controls that do not contain the form:tab-index attribute or contain the attribute with a value of 0 are navigated next. These controls are navigated according to their position in the form.
5. Controls that have the form:disabled attribute set to true are not included in the navigation, independent on their form:tab-index value.

<define name="common-tab-attlist" combine="interleave">

<optional>

<attribute name="form:tab-index" a:defaultValue="0">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Tab Stop

The form:tab-stop attribute specifies whether or not a control is included in the tabbing navigation order. This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:password>
* <form:file>
* <form:formatted-text>
* <form:combobox>
* <form:listbox>
* <form:button>
* <form:image>
* <form:checkbox>
* <form:radio>
* <form:grid>

If the value is false, the control is not included in the tabbing navigation.

<define name="common-tab-attlist" combine="interleave">

<optional>

<attribute name="form:tab-stop" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Target Frame

The office:target-frame attribute specifies the link target frame of the area. This attribute is supported for the following elements:

* <form:button>
* <form:image>

<define name="target-frame">

<optional>

<attribute name="office:target-frame" a:defaultValue="\_blank">

<ref name="targetFrameName"/>

</attribute>

</optional>

</define>

### Target Location

An xlink:href attribute specifies the URL that is loaded if a button is clicked. This attribute is supported for the following elements:

* <form:button>
* <form:image>

This attribute is only evaluated if the value of the form:button-type attribute is location.

<define name="target-location">

<optional>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

</optional>

</define>

### Title

The form:title attribute contains additional information about a control. The value of the attribute can be used as a tool tip. This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:password>
* <form:file>
* <form:formatted-text>
* <form:fixed-text>
* <form:combobox>
* <form:listbox>
* <form:button>
* <form:image>
* <form:checkbox>
* <form:radio>
* <form:image>
* <form:image-frame>
* <form:grid>

<define name="common-title-attlist">

<optional>

<attribute name="form:title"/>

</optional>

</define>

### Visual Effect

The form:visual-effect attributes specifies a visual affect to apply to a control. The attribute values can be flat for a flat visual effect and 3d for a 3D effect. This attribute is supported for the following elements:

* <form:checkbox>
* <form:radio>

<define name="common-form-visual-effect-attlist" combine="interleave">

<optional>

<attribute name="form:visual-effect">

<choice>

<value>flat</value>

<value>3d</value>

</choice>

</attribute>

</optional>

</define>

### Relative Image Position

The form:image-position and form:image-align together specify the position of an image to be displayed in a form control, relative to the label text.

If the form:image-position attribute has the value center, the image shown in a control should be centered relative to the control's text.

If the form:image-position attribute has one of the values start, end, top, bottom, the image is to be placed before, after, above, or below the text. In this case, the form:image-align attribute specifies which border (start, end) or axis (center) of the image and the text are to be aligned. If the form:image-position attribute is not present, it is assumed to be center. The form:image-position and form:image-align attributes are supported for the following elements:

* <form:button>
* <form:checkbox>
* <form:radio>

<define name="common-form-relative-image-position-attlist"

combine="interleave">

<choice>

<optional>

<attribute name="form:image-position" a:defaultValue="center">

<value>center</value>

</attribute>

</optional>

<group>

<attribute name="form:image-position">

<choice>

<value>start</value>

<value>end</value>

<value>top</value>

<value>bottom</value>

</choice>

</attribute>

<optional>

<attribute name="form:image-align" a:defaultValue="center">

<choice>

<value>start</value>

<value>center</value>

<value>end</value>

</choice>

</attribute>

</optional>

</group>

</choice>

</define>

### Database Binding Attributes

A control may be bound to a database fields. In this case, the controls becomes data-aware. The control acquires the values of a database field by going through a result set that is provided by the form. Each time there is a row change in the form, the value of the control may change. The value changes are stored in the associated database field.

#### Bound Column

The form:bound-column attribute specifies the column values of the list source result set that are used to fill the data field values. This attribute is supported for the <form:listbox> element.

<define name="bound-column">

<optional>

<attribute name="form:bound-column">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Convert Empty To Null

The form:convert-empty-to-null attribute specifies whether or not empty current values are regarded as NULL This attribute is important for data-aware controls to determine which values to store for the bound database field. This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:formatted-text>
* <form:combobox>

If the value of the attribute is true, an empty string in the control is regarded as the dedicated NULL value. If the value of the attribute is false, an empty string in the control is regarded as an empty string.

<define name="common-convert-empty-attlist">

<optional>

<attribute name="form:convert-empty-to-null" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Data Field

The form:data-field attribute specifies the name of a result set column. The result set is determined by the form which the control belongs to. This attribute is supported for the following elements:

* <form:text>
* <form:textarea>
* <form:formatted-text>
* <form:combobox>
* <form:listbox>
* <form:checkbox>
* <form:radio>
* <form:image-frame>

<define name="common-data-field-attlist">

<optional>

<attribute name="form:data-field">

<ref name="string"/>

</attribute>

</optional>

</define>

#### List Source

The form:list-source attribute specifies the source used to populate the list in a list box or combo box. The first column of the list source result set populates the list. This attribute is supported for the following elements:

* <form:combobox>
* <form:listbox>

<define name="list-source">

<optional>

<attribute name="form:list-source">

<ref name="string"/>

</attribute>

</optional>

</define>

#### List Source Type

The form:list-source-type attribute specifies the type of data source that is used to populates the list data in a list box or combo box. This attribute is supported for the following elements:

* <form:combobox>
* <form:listbox>

The value of this attribute can be one of the following:

* table: The list is populated using the content of a database table.
* query: The list is populated by executing a query.
* sql: The list is populated by executing an SQL statement.
* sql-pass-through: The list is populated by executing any type of statement that is passed directly to a database driver, without being interpreted by the application.
* value-list: The list is populated with values specified by the user using the form:value attribute in the <form:option> element. This setting is only applicable to list boxes.
* table-fields: The list is populated using the field names in a database table.

<define name="list-source-type">

<optional>

<attribute name="form:list-source-type">

<choice>

<value>table</value>

<value>query</value>

<value>sql</value>

<value>sql-pass-through</value>

<value>value-list</value>

<value>table-fields</value>

</choice>

</attribute>

</optional>

</define>

## Event Listeners

Forms and form controls may have event listeners attached. The event listeners that are attached to, for example, a list box or button, are represented by an event listener element as described in section 12.4. This element is contained within the form or form control element, for example, the <form:listbox> element or the <form:button> element.

Section 12.4.1 contains guidelines for event names that may be used within forms and form controls. In addition to those, the following events may be used for forms and form controls.

| Value of script:event-name Attribute | Applies To | Description of Event |
| --- | --- | --- |
|  | Button or image. | Occurs before the “on performaction” event takes place. Allows the user to veto the action. |
| form:performaction | Button or image. | Occurs when the control action is to be performed. The common interpretation of this event is “pressing the button”. |
|  | All controls that allow text input. | Occurs when a user changes the text in a control. |
|  | Check box or radio button. | Occurs when the state of a check box or radio button changes. |
|  | All controls. | Occurs when a user presses and holds one of the mouse buttons and moves the mouse pointer onto a control. |
|  | same objects as for form:on-reset | Occurs before the on-reset event takes place. Allows the user to veto the reset event. |
|  | All controls that can be bound to a database field, that is controls that contain the data-field attribute. | Occurs before the on-update event takes place. Allows the user to veto the update. |
|  | All controls that can be bound to a database field, that is controls that contain the data-field attribute. | Occurs when the content of a control that is bound to a database field is committed. |
|  | Forms. | Occurs when the form establishes a connection to the data source. |
|  | Forms. | Occurs when the form is about to refresh a data source connection. |
|  | Forms. | Occurs when the form has refreshed a data source connection. |
|  | Forms. | Occurs when the form is about to drop a data source connection. |
|  | Forms. | Occurs when the form has dropped a data source connection. |
|  | Forms. | Occurs when the user is about to delete a record. |
|  | Forms. | Occurs before the “on rowchange” event takes place. Allows the user to veto the change. |
|  | Forms. | Occurs after changes to a row are complete, such as deletions, updates, and insertions. |
|  | Forms. | Occurs before the form is moved to another row. Allows the user to veto the move. |
|  | Forms. | Occurs after the form is moved to another row. |
|  | Forms. | Occurs when the form needs to fill parameters to connect to a data source. |
|  | Forms, combo boxes and list boxes. | Occurs when a database-related error occurs. |
| form:adjust | Value Range | Occurs when the value of a Value Range element has been adjusted. |

## Properties

The <form:properties> element may be used to store the following settings for controls and forms:

* Settings that are not known by the document format.
* Settings that are provided by external vendors.
* Settings that are specific to the application.

Properties consist of a name/value pair. The name identifies the property. The value can be given in a fundamental data type or as a list of fundamental data types.

### Property Set

The <form:properties> element contains the property elements. Properties are encoded using the form:property element, except for list properties, which make use of the form:list-property element.

<define name="form-properties">

<element name="form:properties">

<oneOrMore>

<ref name="form-property"/>

</oneOrMore>

</element>

</define>

### Property

The <form:property> element describes a single property, and contains its name, type and value.

<define name="form-property" combine="choice">

<element name="form:property">

<ref name="form-property-name"/>

<ref name="form-property-value-and-type-attlist"/>

</element>

</define>

#### Property Name

The form:property-name attribute specifies the name of a property element.

<define name="form-property-name" combine="interleave">

<attribute name="form:property-name">

<ref name="string"/>

</attribute>

</define>

#### Property Value and Type

The value and type of form properties are represented through the common office:value-type and suitable value attributes. See section 6.7.1for more information on these attributes.

In addition to these value types, form properties can also be empty. This is represented by the special value type void. Such properties have no value attribute.

<define name="form-property-value-and-type-attlist" combine="interleave">

<choice>

<ref name="common-value-and-type-attlist"/>

<attribute name="office:value-type">

<value>void</value>

</attribute>

</choice>

</define>

### List Property

The <form:list-property> element specifies a property that contains a list of values. A value type attribute determines which types are allowed on the list elements. The element contains a sequence of list value elements, each of which contains a value attribute suitable to the value type given in the <form:list-property> element. The value attributes are the same as those used elsewhere in the specification, except that the type attribute is attached to the container element, which the value attributes are attached to the list values. (See section 6.7.1 for more information on vale and value type attributes.)

<define name="form-property" combine="choice">

<element name="form:list-property">

<ref name="form-property-name"/>

<ref name="form-property-type-and-value-list"/>

</element>

</define>

#### List Value

The list value element contains value attributes for the value type given in the containing <form:list-property> element.

<define name="form-property-type-and-value-list">

<choice>

<group>

<attribute name="office:value-type">

<value>float</value>

</attribute>

<zeroOrMore>

<element name="form:list-value">

<attribute name="office:value">

<ref name="double"/>

</attribute>

</element>

</zeroOrMore>

</group>

<group>

<attribute name="office:value-type">

<value>percentage</value>

</attribute>

<zeroOrMore>

<element name="form:list-value">

<attribute name="office:value">

<ref name="double"/>

</attribute>

</element>

</zeroOrMore>

</group>

<group>

<attribute name="office:value-type">

<value>currency</value>

</attribute>

<zeroOrMore>

<element name="form:list-value">

<attribute name="office:value">

<ref name="double"/>

</attribute>

<optional>

<attribute name="office:currency">

<ref name="string"/>

</attribute>

</optional>

</element>

</zeroOrMore>

</group>

<group>

<attribute name="office:value-type">

<value>date</value>

</attribute>

<zeroOrMore>

<element name="form:list-value">

<attribute name="office:date-value">

<ref name="dateOrDateTime"/>

</attribute>

</element>

</zeroOrMore>

</group>

<group>

<attribute name="office:value-type">

<value>time</value>

</attribute>

<zeroOrMore>

<element name="form:list-value">

<attribute name="office:time-value">

<ref name="duration"/>

</attribute>

</element>

</zeroOrMore>

</group>

<group>

<attribute name="office:value-type">

<value>boolean</value>

</attribute>

<zeroOrMore>

<element name="form:list-value">

<attribute name="office:boolean-value">

<ref name="boolean"/>

</attribute>

</element>

</zeroOrMore>

</group>

<group>

<attribute name="office:value-type">

<value>string</value>

</attribute>

<zeroOrMore>

<element name="form:list-value">

<attribute name="office:string-value">

<ref name="string"/>

</attribute>

</element>

</zeroOrMore>

</group>

<attribute name="office:value-type">

<value>void</value>

</attribute>

</choice>

</define>

**Example**: Form properties

The following contains a string property “Name” with value “Name 1”, and a string list property “Items” containing the strings “Item 1”, “Item 2”, “Item 3”.

<form:properties>

<form:property form:property-name="Name"

office:value-type="string"

office:string-value="Name 1">

<form:list-property form:property-name="Items"

office:value-type="string" >

<form:list-value office:string-value="Item 1"/>

<form:list-value office:string-value="Item 2"/>

<form:list-value office:string-value="Item 3"/>

</form:list-property>

</form:properties>

1. Common Content

## Annotation

The <office:annotation> element specifies an OpenDocument annotation. The annotation's text is contained in <text:p> and <text:list> elements.

<define name="office-annotation">

<element name="office:annotation">

<ref name="office-annotation-attlist"/>

<ref name="draw-caption-attlist"/>

<ref name="common-draw-position-attlist"/>

<ref name="common-draw-size-attlist"/>

<ref name="common-draw-shape-with-text-and-styles-attlist"/>

<optional>

<ref name="dc-creator"/>

</optional>

<optional>

<ref name="dc-date"/>

</optional>

<optional>

<ref name="meta-date-string"/>

</optional>

<zeroOrMore>

<choice>

<ref name="text-p"/>

<ref name="text-list"/>

</choice>

</zeroOrMore>

</element>

</define>

The attributes associated with the <office:annotation> element are:

* Display
* Position, size, style, layer, z-index, id, and transformation (see section 9.2.15)
* Text anchor, table background, draw end position (see section 9.2.16)
* Caption point, round corners (see section 9.2.10)

#### Display

The office:display attribute specifies whether or not the annotation is visible.

<define name="office-annotation-attlist" combine="interleave">

<optional>

<attribute name="office:display">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Caption Attributes

The following attributes can be attached to the <office:annotation> element to influence how it is displayed: svg:x, svg:y, svg:width, svg:height, draw:caption-point-x, draw:caption-point-y, draw:corner-radius, table:end-cell-address, table:end-x, table:end-y, text:anchor-type, text:anchor-page-number, draw:layer, draw:style-name, draw:text-style-name, draw:transform, draw:name, draw:z-index and draw:id. Their meaning is the same as if they are applied to a <draw:caption> element (see section 9.2.10). The use of these attributes is optional.

### Creator

The optional <dc:creator> element described in section 3.1.7 specifies the author of the annotation.

### Creation Date and Time

The optional <dc:date> element described in section 3.1.9 specifies the creation date and time of the annotation.

### Creation Date and Time String

If the application only has a date string and cannot parse this string, it may write the string into the <meta:date-string> element.

<define name="meta-date-string">

<element name="meta:date-string">

<ref name="string"/>

</element>

</define>

## Number Format

The OpenDocument number format consists of three parts:

* Prefix – the text that is displayed before the number
* Display format specification, for example, A, B, C, or 1, 2, 3
* Suffix – the text that is displayed after the number

### Prefix and Suffix

The style:num-prefix and style:num-suffix attributes specify what to display before and after the number.

If the prefix and suffix do not contain alphanumeric characters, an [XSLT] format attribute can be created from the OpenDocument attributes by concatenating the values of the style:num-prefix, style:num-format, and style:num-suffix attributes.

<define name="common-num-format-prefix-suffix-attlist" combine="interleave">

<optional>

<attribute name="style:num-prefix">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="style:num-suffix">

<ref name="string"/>

</attribute>

</optional>

</define>

### Format Specification

The style:num-format attribute specifies the format of the number in the same way as the [XSLT] format attribute. The number styles supported are as follows:

* Numeric: 1, 2, 3, ...
* Alphabetic: a, b, c, ... or A, B, C, ...
* Roman: i, ii, iii, iv, ... or I, II, III, IV,...

The value of this attribute can be "1", "a", "A", "i", or "I". For some elements, the attribute value also can be empty. In this case, no number is displayed.

<define name="common-num-format-attlist" combine="interleave">

<choice>

<attribute name="style:num-format">

<choice>

<value>1</value>

<value>i</value>

<value>I</value>

<ref name="string"/>

<empty/>

</choice>

</attribute>

<group>

<attribute name="style:num-format">

<choice>

<value>a</value>

<value>A</value>

</choice>

</attribute>

<ref name="style-num-letter-sync-attlist"/>

</group>

<empty/>

</choice>

</define>

### Letter Synchronization in Number Formats

If letters are used in alphabetical order for numbering, there are two ways to process overflows within a digit, as follows:

* A new digit is inserted. Its start value is A, and it is incremented every time an overflow occurs in the following digit. The numbering sequence in this case is something like a,b,c, ..., z, aa, ab, ac, ...,az, ba, ..., and so on.
* A new digit is inserted that always has the same value as the following digit. The numbering sequence in this case is something like a, b, c, ..., z, aa, bb, cc, ..., zz, aaa, ..., and so on. This is called **letter synchronization**.

The style:num-letter-sync specifies whether letter synchronization shall take place.

<define name="style-num-letter-sync-attlist" combine="interleave">

<optional>

<attribute name="style:num-letter-sync">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## Change Tracking Metadata

Meta-data for change tracking is contained inside an <office:change-info> element. It contains the author and creation date of a tracked change, as well as an optional comment.

<define name="office-change-info">

<element name="office:change-info">

<ref name="dc-creator"/>

<ref name="dc-date"/>

<zeroOrMore>

<ref name="text-p"/>

</zeroOrMore>

</element>

</define>

#### Creator

The <dc:creator> element as described in section 3.1.7 specifies the name of the author who changed the document.

#### Date and Time

The <dc:date> element as described in section 3.1.9 specifies the date and time when the change took place.

#### Comment

An additional comment may be included as <text:p> elements.

## Event Listener Tables

Many objects such as controls, images, text boxes, or an entire document support events. An event binds the occurrence of a particular condition to an action that is executed if the condition arises. For example, if a user places the cursor over a graphic, this condition triggers an action that is supported by the office application. This event, called "on-mouse-over", can be associated with a macro that is executed whenever the condition occurs, that is, whenever a user places the cursor over a graphic.

The XML representation of events and event tables is structured as follows:

* All of the event elements that are associated with an object are located in a container element called <office:event-listeners>.
* Each event-to-action association is recorded in one <script:event-listener> element.
* Depending on the type of action that the event triggers, the following elements are used:
  + The <script:event-listener> element represents events that are bound to a macro or script.
  + The <presentation:event-listener> element represents events that are bound to an action that is specific to a presentation, for example, go to the next page. Presentation events are described in section .

The <office:event-listeners> element specifies the table of events that are associated with an object.

<define name="office-event-listeners">

<element name="office:event-listeners">

<zeroOrMore>

<choice>

<ref name="script-event-listener"/>

<ref name="presentation-event-listener"/>

</choice>

</zeroOrMore>

</element>

</define>

### Event Listener

The <script:event-listener> element binds an event to a macro.

<define name="script-event-listener" combine="interleave">

<element name="script:event-listener">

<ref name="script-event-listener-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the <script:event-listener> element are:

* Event name
* Script language
* Macro Name and Location

#### Event Name

The script:event-name attribute specifies the name of the event. Since the available events, their names and their meanings are application and script language dependent, the name should be preceded by a namespace prefix, so that the corresponding namespace together with the event name can be used to identify the semantic of the event.

Where appropriate, it is recommended to use the event names described in [DOMEvents2]. The corresponding namespace is "<http://www.w3.org/2001/xml-events>".

Note: Event names defined in [DOMEvents2] are not namespaced. If used in OpenDocument, they should be preceded by a namespace prefix as described above. [DOMEvents3], which is a work in progress, specifies namespaced event names. After completion of this specification, it is recommended to use event names as specified in [DOMEvents3].

The following table describes events defined in [DOMEvents2] that are typically supported by office application and have an equivalent event in HTML. The namespace that should be used for these events is “<http://www.w3.org/2001/xml-events>”. The namespace prefix used in this specification is “dom”.

| Value of script:event-name Attribute | Equivalent HTML Event | Description of Event |
| --- | --- | --- |
| dom:change | onchange | Occurs when a control is no longer focused and the value of the control was modified since it was given focus. |
| dom:DOMFocusIn | onfocus | Occurs when a control is given focus using the mouse or the TAB key. |
| dom:DOMFocusOut | onblur | Occurs when a control is no longer focused as a result of moving the mouse or by tabbing navigation. It may be used with the same elements as form:on-focus. |
|  | onmouseover | Occurs when the mouse pointer is moved over the control. |
|  | onmousemove | Occurs when the mouse pointer is moved onto a control. |
|  | onmousedown | Occurs when a mouse button is pressed on a control. |
|  | onmouseup | Occurs when a mouse button is released on a control. |
| on-mouseout | onmouseout | Occurs when the mouse pointer is moved away from a control. |
|  | onreset | Occurs when a form is reset. |
|  | onsubmit | Occurs when a form is submitted. |

### Event Types

In addition to the HTML event types, the XML file format for office applications allows additional events to be handled at run time.

<define name="script-event-listener-attlist" combine="interleave">

<attribute name="script:event-name">

<ref name="string"/>

</attribute>

</define>

#### Script Language

The script:language attribute specifies the scripting language in which the macro or script which is associated with the event is written. See also section 2.5.1.

<define name="script-event-listener-attlist" combine="interleave">

<attribute name="script:language">

<ref name="string"/>

</attribute>

</define>

#### Macro Name and Location

The macro code that should be called for the event can be either specified by an IRI in [XLink] notation, or a simple name specified by a script:macro-name attribute. If an XLink is used, the IRI may have an arbitrary protocol, for instance one that encodes the name of a macro library name together with macro name defined in this library. Both, the XLink IRI as well as a simple name, are script language dependent.

<define name="script-event-listener-attlist" combine="interleave">

<choice>

<attribute name="script:macro-name">

<ref name="string"/>

</attribute>

<group>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onRequest">

<value>onRequest</value>

</attribute>

</optional>

</group>

</choice>

</define>

## Mathematical Content

Mathematical content is represented by MathML 2.0 (see [MathML])

<define name="math-math">

<element name="math:math">

<ref name="mathMarkup"/>

</element>

</define>

<!-- To avoid inclusion of the complete MathML schema, anything -->

<!-- is allowed within a math:math top-level element -->

<define name="mathMarkup">

<zeroOrMore>

<choice>

<attribute>

<anyName/>

</attribute>

<text/>

<element>

<anyName/>

<ref name="mathMarkup"/>

</element>

</choice>

</zeroOrMore>

</define>

## DDE Connections

A Dynamic Data Exchange (DDE) connection consists of the parameters for the DDE target application, a file name, and a command string. A DDE connection also takes a parameter that specifies whether it will be updated automatically or only on the user's request. Every DDE connection must be named.

All elements making use of DDE connections must contain their content (or its presentation), so that documents using DDE can still be properly displayed on machines which do not support the DDE mechanism, or where the DDE target is not available. Applications should preserve the DDE connection information even if they cannot make use of it, so that other applications can make use the DDE facilities.

DDE only is available on some operating systems. In order to create portable documents, authors are advised to use this feature in their documents with great care.

### Container for DDE Connection Declarations

Within text and spreadsheet documents, DDE connection declarations are contained in one declaration element. For text documents, the element is <text:dde-connection-decls> as described in section 4.8. For spreadsheet documents, it is <table:dde-links> as described in section 8.10.

### Declaring DDE Connections for Text Fields

Every DDE connection used by a text field is declared using a declaration element. Multiple DDE fields can refer to one DDE connection by using the same name. The declaration element has no content.

<define name="text-dde-connection-decl">

<element name="text:dde-connection-decl">

<ref name="text-dde-connection-decl-attlist"/>

<ref name="common-dde-connection-decl-attlist"/>

</element>

</define>

The attributes that may be associated with the <text:dde-connection-decl> element are:

* Connection name
* DDE target application
* DDE target topic
* DDE target item
* Automatic update flag

#### Connection Name

The office:name attribute specifies the name by which the connection will be referred.

<define name="text-dde-connection-decl-attlist" combine="interleave">

<attribute name="office:name">

<ref name="string"/>

</attribute>

</define>

#### Target Application

The office:dde-application attribute specifies the name of the target application to use for the DDE connection.

<define name="common-dde-connection-decl-attlist" combine="interleave">

<attribute name="office:dde-application">

<ref name="string"/>

</attribute>

</define>

**Example**: The target name for the OpenOffice.org software is soffice. Therefore, internal DDE links have the attribute text:dde-application="soffice".

#### Target Topic

The office:dde-topic attribute specifies the name of the topic to use for the DDE connection.

<define name="common-dde-connection-decl-attlist" combine="interleave">

<attribute name="office:dde-topic">

<ref name="string"/>

</attribute>

</define>

**Example**: The OpenOffice.org software interprets the DDE topic as the name of the file.

#### Target Item

The office:dde-item attribute specifies which information the target application should deliver.

<define name="common-dde-connection-decl-attlist" combine="interleave">

<attribute name="office:dde-item">

<ref name="string"/>

</attribute>

</define>

**Example**: If the target application for the DDE connection is the OpenOffice.org Writer software, the item represents the name of a bookmark. OpenOffice.org delivers the current text content to the requesting application.

#### Automatic Update

Office applications by default automatically update DDE links. If a manual update of the link is preferred, the text:automatic-update attribute my be used to specify that the DDE connection links should only be updated at the request of the user.

If the value of this attribute is true, then the application is expected to automatically update the DDE links. If this value of this attribute is false, the DDE links are updated on user request only.

<define name="common-dde-connection-decl-attlist" combine="interleave">

<optional>

<attribute name="office:automatic-update" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Declaring DDE Connections for Tables

The DDE connection data of tables is contained in an <office:dde-source> element. The usage of this element differs between spreadsheet and text document tables. For text document tables, the element is contained within the table's <table:table> element directly. For spreadsheet documents, it is contained in a <table:dde-link> element, that describes a single DDE connection.

The <table:dde-link> element contains the DDE source data in the <office:dde-source> element and a simple table element that might be used to cache the data of the DDE source. The table does not need a name and does not contain style information. Only the data contained in the cell attributes is used. The cells themselves remain empty.

<define name="table-dde-link">

<element name="table:dde-link">

<ref name="office-dde-source"/>

<ref name="table-table"/>

</element>

</define>

The <office:dde-source> element supports office:dde-application, office:dde-topic, office:dde-item and office:automatic-update attributes as described in section 12.6.2. In addition to this, it supports the following attributes

* Connection name
* Conversion mode

<define name="office-dde-source">

<element name="office:dde-source">

<ref name="office-dde-source-attlist"/>

<ref name="common-dde-connection-decl-attlist"/>

</element>

</define>

#### Connection Name

The office:name attribute specifies the name by which the connection can be referred.

<define name="office-dde-source-attlist" combine="interleave">

<optional>

<attribute name="office:name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Conversion Mode

The office:conversion-mode attribute specifies the method by which the DDE server converts its data into numbers. There are three possible values:

* into-default-style-data-style: Numbers are converted into the data style which is set on the default style.
* into-english-number: numbers are converted into the English default format.
* keep-text: Numbers are not converted. They are treated as text.

<define name="office-dde-source-attlist" combine="interleave">

<optional>

<attribute name="office:conversion-mode"

a:defaultValue="into-default-style-data-style">

<choice>

<value>into-default-style-data-style</value>

<value>into-english-number</value>

<value>keep-text</value>

</choice>

</attribute>

</optional>

</define>

1. SMIL Animations

This section describes [SMIL20] based elements and attribute that can be used within the OpenDocument format for animation effects.

## Basic Animation Elements

The basic animation elements are directly derived from basic animation elements specified §3.5 and §12.5 of [SMIL20], and in section §19.2 of [SVG].

### Animate

The <anim:animate> element behaves like the [SMIL20] <smil:animate> element. See §3.5.1 of [SMIL20] for details.

<define name="animation-element" combine="choice">

<element name="anim:animate">

<ref name="common-anim-target-attlist"/>

<ref name="common-anim-named-target-attlist"/>

<ref name="common-anim-values-attlist"/>

<ref name="common-anim-spline-mode-attlist"/>

<ref name="common-spline-anim-value-attlist"/>

<ref name="common-timing-attlist"/>

<ref name="common-anim-add-accum-attlist"/>

</element>

</define>

### Set

The <anim:set> element behaves like the [SMIL20] <smil:set> element. See §3.5.2 of [SMIL20] for details.

<define name="animation-element" combine="choice">

<element name="anim:set">

<ref name="common-anim-target-attlist"/>

<ref name="common-anim-named-target-attlist"/>

<ref name="common-anim-set-values-attlist"/>

<ref name="common-timing-attlist"/>

<ref name="common-anim-add-accum-attlist"/>

</element>

</define>

### Animate Motion

The <anim:animateMotion> element behaves as the [SVG] <svg:animateMotion> element. See §19.2.12 of [SVG] and §3.5.3 of [SMIL20] for details.

<define name="animation-element" combine="choice">

<element name="anim:animateMotion">

<ref name="anim-animate-motion-attlist"/>

<ref name="common-anim-target-attlist"/>

<ref name="common-anim-named-target-attlist"/>

<ref name="common-anim-add-accum-attlist"/>

<ref name="common-anim-values-attlist"/>

<ref name="common-timing-attlist"/>

<ref name="common-spline-anim-value-attlist"/>

</element>

</define>

#### The Motion Path

The [SVG] svg:path attribute can be used to specify a path along which the element is animated. See §19.2.12 of [SVG] for details.

<define name="anim-animate-motion-attlist" combine="interleave">

<optional>

<attribute name="svg:path">

<ref name="pathData"/>

</attribute>

</optional>

</define>

#### Origin

The [SVG] svg:origin attribute can be used to specify an origin. See §19.2.12 of [SVG] for details.

<define name="anim-animate-motion-attlist" combine="interleave">

<optional>

<attribute name="svg:origin">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Calc Mode

The [SMIL20] smil:calcMode attribute is used to specify the interpolation mode of the animation. See §19.2.12 of [SVG] for details.

<define name="anim-animate-motion-attlist" combine="interleave">

<optional>

<attribute name="smil:calcMode" a:defaultValue="paced">

<choice>

<value>discrete</value>

<value>linear</value>

<value>paced</value>

<value>spline</value>

</choice>

</attribute>

</optional>

</define>

### Animate Color

The <anim:animateColor> element behaves like the [SMIL20] <smil:animateColor> element. See §3.5.4 of [SMIL20] for details.

<define name="animation-element" combine="choice">

<element name="anim:animateColor">

<ref name="common-anim-target-attlist"/>

<ref name="common-anim-named-target-attlist"/>

<ref name="common-anim-add-accum-attlist"/>

<ref name="common-anim-values-attlist"/>

<ref name="common-anim-spline-mode-attlist"/>

<ref name="common-spline-anim-value-attlist"/>

<ref name="anim-animate-color-attlist"/>

<ref name="common-timing-attlist"/>

</element>

</define>

#### Color Interpolation

The anim:color-interpolation attribute specifies the color space that is used for color interpolation.

<define name="anim-animate-color-attlist" combine="interleave">

<optional>

<attribute name="anim:color-interpolation" a:defaultValue="rgb">

<choice>

<value>rgb</value>

<value>hsl</value>

</choice>

</attribute>

</optional>

</define>

#### Color Interpolation Direction

The anim:color-interpolation-direction attribute specify the direction that is used for color interpolation. This is only valid for the HSL color space.

<define name="anim-animate-color-attlist" combine="interleave">

<optional>

<attribute name="anim:color-interpolation-direction"

a:defaultValue="clockwise">

<choice>

<value>clockwise</value>

<value>counter-clockwise</value>

</choice>

</attribute>

</optional>

</define>

### Animate Transform

The <anim:animateTransform> element is based on the [SVG] <svg:animateTransform> element. See §19.2.14 of [SVG] for details.

<define name="animation-element" combine="choice">

<element name="anim:animateTransform">

<ref name="common-anim-target-attlist"/>

<ref name="common-anim-named-target-attlist"/>

<ref name="common-anim-add-accum-attlist"/>

<ref name="common-anim-values-attlist"/>

<ref name="anim-animate-transform-attlist"/>

<ref name="common-timing-attlist"/>

</element>

</define>

#### Transformation Type

The [SVG] svg:type attribute is used to specify the transformation type. See §19.2.14 of [SVG] for details.

<define name="anim-animate-transform-attlist" combine="interleave">

<attribute name="svg:type">

<choice>

<value>translate</value>

<value>scale</value>

<value>rotate</value>

<value>skewX</value>

<value>skewY</value>

</choice>

</attribute>

</define>

### Transition Filter

The <anim:transitionFilter> element is based on the [SMIL20] <smil:transitionFilter> element. See §12.5.1 of [SMIL20] for details.

<define name="animation-element" combine="choice">

<element name="anim:transitionFilter">

<ref name="common-anim-target-attlist"/>

<ref name="common-anim-add-accum-attlist"/>

<ref name="common-anim-values-attlist"/>

<ref name="common-anim-spline-mode-attlist "/>

<ref name="anim-transition-filter-attlist"/>

<ref name="common-timing-attlist"/>

</element>

</define>

#### Transition Type

The [SMIL20] smil:type attribute is used to specify the transition type or family. See §12.8 of [SMIL20] for a list of supported types.

<define name="anim-transition-filter-attlist" combine="interleave">

<attribute name="smil:type">

<ref name="string"/>

</attribute>

</define>

#### Transition Subtype

The [SMIL20] smil:subtype attribute can be used to specify the transition subtype. See §12.8 of [SMIL20] for a list of supported subtypes.

<define name="anim-transition-filter-attlist" combine="interleave">

<optional>

<attribute name="smil:subtype">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Transition Direction

The [SMIL20] smil:direction attribute can be used to specify the transition direction. See §12.4.1 of [SMIL20] for details.

<define name="anim-transition-filter-attlist" combine="interleave">

<optional>

<attribute name="smil:direction" a:defaultValue="forward">

<choice>

<value>forward</value>

<value>reverse</value>

</choice>

</attribute>

</optional>

</define>

#### Fade Color

The [SMIL20] smil:fadeColor attribute can be used to specify the transition fade color for transitions that makes use of a start or end color. See §12.5.1 of [SMIL20] for details.

<define name="anim-transition-filter-attlist" combine="interleave">

<optional>

<attribute name="smil:fadeColor">

<choice>

<value>forward</value>

<value>reverse</value>

</choice>

</attribute>

</optional>

</define>

#### The Transition Mode

The [SMIL20] smil:mode attribute is used to specify if the animated element will be transition in or out. See §12.5.1 of [SMIL20] for details.

<define name="anim-transition-filter-attlist" combine="interleave">

<optional>

<attribute name="smil:mode" a:defaultValue="in">

<choice>

<value>in</value>

<value>out</value>

</choice>

</attribute>

</optional>

</define>

## Animation Model Attributes

The animation model uses the same concepts and syntax as specified in §3 of [SMIL20].

## Common Animation Attributes

#### Element Id

The anim:id attribute defines an ID that is used to identify the element inside a document.

<define name="common-anim-attlist" combine="interleave">

<optional>

<attribute name="anim:id">

<ref name="ID"/>

</attribute>

</optional>

</define>

### Animation Target Attributes

#### Target Element

The [SMIL20] smil:targetElement attribute is used to specify the target element to be animated. See §3.4.1 of [SMIL20] for details. See section 9.8.2 for details about the usage of this attribute in presentation documents.

<define name="common-anim-target-attlist" combine="interleave">

<optional>

<attribute name="smil:targetElement">

<ref name="IDREF"/>

</attribute>

</optional>

</define>

#### Target Attribute

The [SMIL20] smil:attributeName attribute is used to specify a target attribute by name. See §3.4.1 of [SMIL20] for details. See section 9.8.2 for details about the usage of this attribute in presentation documents.

<define name="common-anim-named-target-attlist" combine="interleave">

<attribute name="smil:attributeName">

<ref name="string"/>

</attribute>

</define>

#### Target Element Sub Item

The anim:sub-item attribute specifies an optional sub item of the target element. Possible values for this element depend on the document type and the target element type. See section 9.8.2 for details about the usage of this attribute in presentation documents.

<define name="common-anim-target-attlist" combine="interleave">

<optional>

<attribute name="anim:sub-item">

<ref name="string"/>

</attribute>

</optional>

</define>

### Animation Function Attributes

#### Value List

The [SMIL20] smil:values attribute specifies the values used to animate the target element. See $3.4.2 of [SMIL20] for details.

<define name="common-anim-values-attlist" combine="interleave">

<optional>

<attribute name="smil:values">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Calc Mode

The [SMIL20] smil:calcMode attribute is used to specify the interpolation mode of the animation function. See $3.4.2 of [SMIL20] for details.

<define name="common-anim-spline-mode-attlist" combine="interleave">

<optional>

<attribute name="smil:calcMode" a:defaultValue="discrete">

<choice>

<value>discrete</value>

<value>linear</value>

<value>paced</value>

<value>spline</value>

</choice>

</attribute>

</optional>

</define>

#### Key Times

The [SMIL20] smil:keyTimes attribute specifies the pacing of the animation. See $3.7.1 of [SMIL20] for details.

<define name="common-spline-anim-value-attlist" combine="interleave">

<optional>

<attribute name="smil:keyTimes">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Key Splines

The [SMIL20] smil:keySplines attribute specifies a cubic Bézier function that controls interval pacing. See $3.7.1 of [SMIL20] for details.

<define name="common-spline-anim-value-attlist" combine="interleave">

<optional>

<attribute name="smil:keySplines">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Accumulation

The [SMIL20] smil:accumulate attribute specifies the accumulation of the animation function. See $3.4.3 of [SMIL20] for details.

<define name="common-anim-add-accum-attlist" combine="interleave">

<optional>

<attribute name="smil:accumulate">

<choice>

<value>none</value>

<value>sum</value>

</choice>

</attribute>

</optional>

</define>

#### Additive

The [SMIL20] smil:additive attribute specifies if the additive of the animation function. See $3.4.3 of [SMIL20] for details.

<define name="common-anim-add-accum-attlist" combine="interleave">

<optional>

<attribute name="smil:additive">

<choice>

<value>replace</value>

<value>sum</value>

</choice>

</attribute>

</optional>

</define>

#### Formula

The anim:formula attribute specifies a formula that is used as the animation function. The identifier '$' will be replaced by a value between 0 and 1 (inclusive) that represents the proportional offset into the animation element's duration. For specific document types, additional identifiers may exist. The following is the minimum supported grammar:

identifier = '$' | 'pi'

function = 'abs'|'sqrt'|'sin'|'cos'|'tan'|'atan'|'acos'|'asin'|'exp'|'log'

binary\_function = 'min'|'max'

basic\_expression =

number |

identifier |

function '(' additive\_expression ')' |

binary\_function

'(' additive\_expression ',' additive\_expression ')' |

'(' additive\_expression ')'

unary\_expression =

'-' basic\_expression |

basic\_expression

multiplicative\_expression =

unary\_expression

( ( '\*' unary\_expression )\* |

( '/' unary\_expression )\* )

additive\_expression =

multiplicative\_expression

( ( '+' multiplicative\_expression )\* |

( '-' multiplicative\_expression )\* )

See section 9.8.2 for details about additional identifiers for presentation documents.

If a anim:formula attribute is given, it overrides the smil:values, smil:to, smil:from and smil:by attributes as specified in the next section.

<define name="common-anim-values-attlist" combine="interleave">

<optional>

<attribute name="anim:formula">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Simple Animation Functions

In addition to describing an animation with a list of values, a simplified version using the [SMIL20] smil:from, smil:to and smil:by attributes can be used. See §3.4.4 of [SMIL20] for details.

<define name="common-anim-set-values-attlist" combine="interleave">

<optional>

<attribute name="smil:to">

<ref name="string"/>

</attribute>

</optional>

</define>

<define name="common-anim-values-attlist" combine="interleave">

<ref name="common-anim-set-values-attlist"/>

<optional>

<attribute name="smil:from">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="smil:by">

<ref name="string"/>

</attribute>

</optional>

</define>

## Animation Timing

The animation timing uses the same concepts and syntax as specified in §10 and §11 of [SMIL20] chapters.

### Animation Timing Attributes

#### Element Start

The [SMIL20] smil:begin attribute can be used to specify the begin time of an element. See §10.3.1 of [SMIL20] for details.

<define name="common-begin-end-timing-attlist" combine="interleave">

<optional>

<attribute name="smil:begin">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Element End

The [SMIL20] smil:end attribute can be used to specify the end time of an element. See §10.3.1 of [SMIL20] for details.

<define name="common-begin-end-timing-attlist" combine="interleave">

<optional>

<attribute name="smil:end">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Element Duration

The [SMIL20] smil:dur attribute can be used to specify the duration of an element. See §10.3.1 of [SMIL20] for details.

<define name="common-dur-timing-attlist" combine="interleave">

<optional>

<attribute name="smil:dur">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Element End Synchronization

The [SMIL20] smil:endsync attribute can be used to control the implicit duration of time containers, as a function of their children. See §10.3.1 of [SMIL20] for details.

<define name="common-endsync-timing-attlist" combine="interleave">

<optional>

<attribute name="smil:endsync">

<choice>

<value>first</value>

<value>last</value>

<value>all</value>

<value>media</value>

</choice>

</attribute>

</optional>

</define>

#### Repeating Elements

The [SMIL20] smil:repeatCount and smil:repeatDur attributes specifies the behavior of repeated animations. See §10.3.1 of [SMIL20] for details.

<define name="common-repeat-timing-attlist" combine="interleave">

<optional>

<attribute name="smil:repeatDur">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="smil:repeatCount">

<choice>

<ref name="nonNegativeInteger"/>

<value>indefinite</value>

</choice>

</attribute>

</optional>

</define>

#### Fill

The [SMIL20] smil:fill attribute specifies the behavior of an element after an animation is finished. See §10.3.1 of [SMIL20] for details.

<define name="common-fill-timing-attlist" combine="interleave">

<optional>

<attribute name="smil:fill">

<choice>

<value>remove</value>

<value>freeze</value>

<value>hold</value>

<value>auto</value>

<value>default</value>

<value>transition</value>

</choice>

</attribute>

</optional>

</define>

#### Fill Default

The [SMIL20] smil:fillDefault attribute specifies the default behavior for the smil:fill attribute. See §10.3.1 of [SMIL20] for details.

<define name="common-fill-default-attlist" combine="interleave">

<optional>

<attribute name="smil:fillDefault">

<choice>

<value>remove</value>

<value>freeze</value>

<value>hold</value>

<value>transition</value>

<value>auto</value>

<value>inherit</value>

</choice>

</attribute>

</optional>

</define>

#### Restart

The [SMIL20] smil:restart attribute can be used to specify the restart behavior of an element. See §10.3.1 of [SMIL20] for details.

<define name="common-restart-timing-attlist" combine="interleave">

<optional>

<attribute name="smil:restart" a:defaultValue="default">

<choice>

<value>never</value>

<value>always</value>

<value>whenNotActive</value>

<value>default</value>

</choice>

</attribute>

</optional>

</define>

#### Restart Default

The [SMIL20] smil:restartDefault attribute can be used to specify the default restart behavior of an element. See §10.3.1 of [SMIL20] for details.

<define name="common-restart-default-attlist" combine="interleave">

<optional>

<attribute name="smil:restartDefault" a:defaultValue="inherit">

<choice>

<value>never</value>

<value>always</value>

<value>whenNotActive</value>

<value>inherit</value>

</choice>

</attribute>

</optional>

</define>

#### Accelerate

The [SMIL20] smil:accelerate attribute can be used to specify a simple acceleration of element time. See §11.1.2 of [SMIL20] for details.

<define name="common-time-manip-attlist" combine="interleave">

<optional>

<attribute name="smil:accelerate" a:defaultValue="0.0">

<ref name="double"/>

</attribute>

</optional>

</define>

#### Decelerate

The [SMIL20] smil:decelerate attribute can be used to specify a simple deceleration of element time. See §11.1.2 of [SMIL20] for details.

<define name="common-time-manip-attlist" combine="interleave">

<optional>

<attribute name="smil:decelerate" a:defaultValue="0.0">

<ref name="double"/>

</attribute>

</optional>

</define>

#### Auto Reverse

The [SMIL20] smil:autoreverse attribute can be used to specify an automatic playback in reverse. See §11.1.2 of [SMIL20] for details.

<define name="common-time-manip-attlist" combine="interleave">

<optional>

<attribute name="smil:autoReverse" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Parallel Animations

The <anim:par> element is based on the [SMIL20] <smil:par> element and defines a parallel time container. See §10.3.2 of [SMIL20] for details.

<define name="animation-element" combine="choice">

<element name="anim:par">

<ref name="common-anim-attlist"/>

<ref name="common-timing-attlist"/>

<ref name="common-endsync-timing-attlist"/>

<zeroOrMore>

<ref name="animation-element"/>

</zeroOrMore>

</element>

</define>

<define name="common-basic-timing-attlist" combine="interleave">

<ref name="common-begin-end-timing-attlist"/>

<ref name="common-dur-timing-attlist"/>

<ref name="common-repeat-timing-attlist"/>

</define>

<define name="common-timing-attlist" combine="interleave">

<ref name="common-basic-timing-attlist"/>

<ref name="common-restart-timing-attlist"/>

<ref name="common-restart-default-attlist"/>

<ref name="common-fill-timing-attlist"/>

<ref name="common-fill-default-attlist"/>

<ref name="common-time-manip-attlist"/>

</define>

### Sequential Animations

The <anim:seq> element is based on the [SMIL20] <smil:seq> element and defines a sequential time container. See §10.3.2 of [SMIL20] for details.

<define name="animation-element" combine="choice">

<element name="anim:seq">

<ref name="common-anim-attlist"/>

<ref name="common-endsync-timing-attlist"/>

<ref name="common-timing-attlist"/>

<zeroOrMore>

<ref name="animation-element"/>

</zeroOrMore>

</element>

</define>

### Iterative Animations

The <anim:iterate> element defines a parallel time container. The difference to a <anim:par> element is that the <anim:iterate> element does not specify effects for its target element itself. Instead of this, it iterates over possible child elements of the target element and executes all its child effects with the children of the target element as target.

<define name="animation-element" combine="choice">

<element name="anim:iterate">

<ref name="common-anim-attlist"/>

<ref name="anim-iterate-attlist"/>

<ref name="common-timing-attlist"/>

<ref name="common-endsync-timing-attlist"/>

<zeroOrMore>

<ref name="animation-element"/>

</zeroOrMore>

</element>

</define>

#### The Target Element

The [SMIL20] smil:targetElement and anim:sub-item attributes specify the target element to whose children the effects should be applied. See section 9.8.2 for details about the attribute's usage in presentation documents.

<define name="anim-iterate-attlist" combine="interleave">

<ref name="common-anim-target-attlist"/>

</define>

#### The Iterate Type

The anim:iterate-type attribute specifies how the iteration targets child elements are iterated. Possible values depends on the document type and the target element type. See section 9.8.2 for details about the attribute's usage in presentation documents.

<define name="anim-iterate-attlist" combine="interleave">

<optional>

<attribute name="anim:iterate-type">

<ref name="string"/>

</attribute>

</optional>

</define>

#### The Iterate Interval

The anim:iterate-interval attribute specifies the delay between the execution of the child effects of this element. The effects of the next iterated child of the target element are started when the given time is elapsed since the effects for the previous child has been started. An iterate interval of zero seconds would have the same behavior as using a <anim:par> element.

<define name="anim-iterate-attlist" combine="interleave">

<optional>

<attribute name="anim:iterate-interval">

<ref name="duration"/>

</attribute>

</optional>

</define>

## Media Elements

### Audio

The <anim:audio> element is based on the [SMIL20] <smil:audio> element. It allows the playback of audio streams during an animation. See §7.3.1 of [SMIL20] for details.

<define name="animation-element" combine="choice">

<element name="anim:audio">

<ref name="common-anim-attlist"/>

<ref name="anim-audio-attlist"/>

<ref name="common-basic-timing-attlist"/>

</element>

</define>

#### Source

The xlink:href attribute specifies the IRI of the audio stream.

<define name="anim-audio-attlist" combine="interleave">

<optional>

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

</optional>

</define>

#### Audio Level

The anim:audio-level attribute specifies the volume during playback. Its value is a number in the range 0 (inaudible) to 1 (the system volume).

<define name="anim-audio-attlist" combine="interleave">

<optional>

<attribute name="anim:audio-level">

<ref name="double"/>

</attribute>

</optional>

</define>

## Special Elements

### Command

The <anim:command> element is used to send generic commands to the application during an animation. The available command types and its parameters depend on the document type and the type of the target element. See section 9.8.2 for details about the element's usage in presentation documents.

<define name="animation-element" combine="choice">

<element name="anim:command">

<ref name="common-anim-attlist"/>

<ref name="anim-command-attlist"/>

<ref name="common-begin-end-timing-attlist"/>

<ref name="common-anim-target-attlist"/>

<zeroOrMore>

<element name="anim:param">

<attribute name="anim:name"/>

<attribute name="anim:value"/>

</element>

</zeroOrMore>

</element>

</define>

#### Command

The anim:command attribute specifies the command that will be executed at the application when this animation element is started.

<define name="anim-command-attlist" combine="interleave">

<attribute name="anim:command">

<ref name="string"/>

</attribute>

</define>

1. Styles

Many objects in an office document have formatting properties. A formatting property influences the visual representation of an object but it does not contribute to the content or structure of the document. Examples of formatting properties are:

* Font family
* Font size
* Font color
* Page margins

In the OpenDocument format, formatting properties are only stored within styles. This differs to the user interface of typical office applications, where formatting properties may be assigned to an object directly, or indirectly by applying a style to the object. Assigning formatting properties to an object directly has the same effect as assigning an unnamed style with the same properties to that object. Therefore, user interface styles remain unchanged conceptually in the OpenDocument file format, while formatting properties assigned directly to an object are assumed to be unnamed styles. In order to use unnamed styles, they are assigned a name and therefore become automatic styles.

There are two main reasons for using styles to store formatting properties:

1. The format and layout of the document get separated from the document content.
2. If two or more objects have the same formatting properties and styles assigned, the formatting properties that are assigned to the objects directly can be represented by a single automatic style for all objects. This saves disk space and allows styles to integrate seamlessly into the overall document style.

Within this chapter, the various style types are explained.

## Style Element

Some style families are very similar in structure and can be represented by the same element. For example, the <style:style> element can represent paragraph, text, and graphic styles.

The individual style families that make use of these element are described separately. Within this section, the common attributes of the style element are described.

<define name="style-style">

<element name="style:style">

<ref name="style-style-attlist"/>

<ref name="style-style-content"/>

<zeroOrMore>

<ref name="style-map"/>

</zeroOrMore>

</element>

</define>

The attributes that may be associated with the <style:style> element are:

* Style name
* Display name
* Style family
* Parent style
* Next style
* List style
* Master page name
* Automatically update
* Data style name
* Class
* Outline numbering level

#### Style Name

The style:name attribute identifies the name of the style. This attribute, combined with the style:family attribute, uniquely identifies a style. The <office:styles>, <office:automatic-styles> and <office:master-styles> elements each must not contain two styles with the same family and the same name.

For automatic styles, a name is generated during document export. If the document is exported several times, it cannot be assumed that the same name is generated each time.

In an XML document, the name of each style is a unique name that may be independent of the language selected for an office applications user interface. Usually these names are the ones used for the English version of the user interface.

<define name="style-style-attlist" combine="interleave">

<attribute name="style:name">

<ref name="styleName"/>

</attribute>

</define>

#### Display Name

The style:display-name attribute specifies the name of the style as it should appear in the user interface. In contrast to the style name itself, this name may contain arbitrary characters. If this attribute is not present, the display name equals the style name.

<define name="style-style-attlist" combine="interleave">

<optional>

<attribute name="style:display-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Style Family

The style:family attribute identifies the family of the style, for example, paragraph, text, or frame. It might have one of the following values: paragraph, text, section, table, table-column, table-row, table-cell, table-page, chart, default, drawing-page, graphic, presentation, control and ruby.

#### Parent Style

The style:parent-style-name attribute specifies the name of the parent style. If a parent style is not specified, a default parent style defined by the application is used. The parent style cannot be an automatic style and has to exist.

<define name="style-style-attlist" combine="interleave">

<optional>

<attribute name="style:parent-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Next Style

The style:next-style-name attribute specifies the style to used for the next paragraph if a paragraph break is inserted in the user interface. By default, the current style is used as the next style.

<define name="style-style-attlist" combine="interleave">

<optional>

<attribute name="style:next-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### List Style

A paragraph style and styles of other families that may contain paragraph properties (for instance graphic styles) can have an associated list style. This applies to automatic and common styles.

The list style specified by the style:list-style-name attribute is only applied to headings and to paragraphs that are contained in a list, where the list does not specify a list style itself, and the list has no list style specification for any of its parents.

The style:list-style-name attribute's value can be empty. In this case, an association with a list style that is inherited from a parent style will be removed.

<define name="style-style-attlist" combine="interleave">

<optional>

<attribute name="style:list-style-name">

<choice>

<ref name="styleName"/>

<empty/>

</choice>

</attribute>

</optional>

</define>

#### Master Page Name

A paragraph or table style can have an associated style:master-page-name attribute. This applies to automatic and common styles. If this attribute is associated with a style, a page break is inserted when the style is applied and the specified master page is applied to the preceding page.

This attribute is ignored if it is associated with a paragraph style that is applied to a paragraph within a table.

<define name="style-style-attlist" combine="interleave">

<optional>

<attribute name="style:master-page-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Automatically Update

The style:auto-update attribute determines whether or not styles are automatically updated when the formatting properties of an object that has the style assigned to it are changed. For example, there might be a paragraph style that contains a formatting property specifying that paragraph text is centered, and this paragraph style is applied to a paragraph. If the user manually changes the formatting of that paragraph text to be right-aligned and the value of the style:auto-update attribute is true, then the paragraph style is automatically updated to reflect the new paragraph formatting and every paragraph that uses the paragraph style is also modified to right-align the paragraph text. This attribute can have a value of true or false.

<define name="style-style-attlist" combine="interleave">

<optional>

<attribute name="style:auto-update" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Data Style Name

Table cell style can have an associated data style. This applies to automatic and common styles. The data style is referenced by the style:data-style-name attribute. See section 14.7 for details about data styles.

<define name="style-style-attlist" combine="interleave">

<optional>

<attribute name="style:data-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Class

A style may belong to an arbitrary class of styles. The class is an arbitrary string. The class has no meaning within the file format itself, but it can for instance be evaluated by user interfaces to show a list of styles where the styles are grouped by its name.

<define name="style-style-attlist" combine="interleave">

<optional>

<attribute name="style:class">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Outline Numbering Level

For style with family paragraph, the style:default-outline-level attribute specifies a default outline level. It takes a number like the text:outline-level attribute of the heading element <text:h>. If this attribute is existing for a paragraph style, and if the paragraph style is assigned to a paragraph by an user interface action, then office applications should convert the paragraph into a heading of the given level. However, the attribute has no effect to the differentiation of headings and paragraphs in the file format itself. The differentiation between headings and paragraphs still takes place by using either a <text:h> or a <text:p> element. If a <text:p> element references a paragraph style that has a style:default-outline-level attribute, the paragraph remains a paragraph and will not become a heading.

<define name="style-style-attlist" combine="interleave">

<optional>

<attribute name="style:default-outline-level">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

#### Formatting Properties

If a style has formatting attributes assigned, the style element contains one ore more formatting property container elements. See section 15 for detailed information about these element.

#### Sample Style

Example: OpenDocument representation of the “Text body” paragraph style

<style:style style:name="Text body" style:family="paragraph"

style:parent-style-name="Standard">

<style:paragraph-properties fo:margin-top="0cm"

fo:margin-bottom=".21cm"/>

</style:style>

### Style Mappings

The <style:map> element specifies the mapping to another style, if certain conditions exist. If a style contains such mappings, it is called an conditional style. There is one element for every condition that the style uses.

Conditional styles usually are supported by paragraph styles contained in text documents and table cell styles contained in spreadsheets only. Conditional styles are also supported by data styles.

<define name="style-map">

<element name="style:map">

<ref name="style-map-attlist"/>

<empty/>

</element>

</define>

The attributes that may be associated with the <style:map> element are:

* Condition
* Applied style
* Base cell address

#### Condition

The style:condition attribute specifies the condition in which a style map should be applied.

The value of this attribute is a Boolean expression. The syntax of the expression is similar to the XPath syntax. If an application detects a condition that it does not recognize, it must ignore the entire <style:map> element.

The following conditions are valid for paragraph styles:

* list-level()=*n*, where *n* is a number between 1 and 10
* outline-level()=*n*, where *n* is a number between 1 and 10
* table() and table-header()
* section()
* header() and footer()
* footnote() and endnote()

The following conditions are valid for paragraph styles:

* is-true-formula(*formula*)
* cell-content-is-between(*value*, *value*)
* cell-content-is-not-between(*value*, v*alue*)
* cell-content() *operator* *value*, where *operator* is one of; '<', '>', '<=', '>=', '=' or '!=', and value is a *numberValue*, a *string* or a *formula*.
* A *numberValue* is a whole or decimal number. The number cannot contain comma separators for numbers of 1000 or greater.
* A *string* comprises one or more characters surrounded by quotation marks.
* A *formula* is a formula (see 8.1.3) without the equals (=) sign at the beginning.

The following conditions are valid for data styles:

* value() *op* *n*, where *op* is a relational operator and *n* is a number.
* For Boolean styles the condition value must be true and false.

The conditions that apply for different types of styles may differ.

<define name="style-map-attlist" combine="interleave">

<attribute name="style:condition">

<ref name="string"/>

</attribute>

</define>

#### Applied Style

The style:apply-style-name attribute specifies the style to apply when the condition specified by the style:condition attribute is true. If the referenced style is undefined or is an automatic style, an error occurs.

<define name="style-map-attlist" combine="interleave">

<attribute name="style:apply-style-name">

<ref name="styleNameRef"/>

</attribute>

</define>

#### Base Cell Address

For table cell styles, the attribute specifies the base cell for relative addresses in formulas. This attribute only applies to cell styles where the condition contains a formula. The value of this attribute must be an absolute cell address with a table name.

<define name="style-map-attlist" combine="interleave">

<optional>

<attribute name="style:base-cell-address">

<ref name="cellAddress"/>

</attribute>

</optional>

</define>

Example: Style mapping

<style:style style:name="Text body" style:family="paragraph"

style:parent-style-name="Standard"

style:next-style-name="Text body">

<style:paragraph-properties fo:margin-top="0cm"

fo:margin-bottom=".21cm"/>

<style:map style:condition="footnote"

style:apply-style-name="footnote"/>

<style:map style:condition="heading(1)"

style:apply-style-name="Heading 1"/>

<style:map style:condition="heading(2)"

style:apply-style-name="Heading 2"/>

</style:style>

## Default Styles

A default style specifies default formatting properties for a certain style family. These defaults are used if a formatting property is neither specified by an automatic nor a common style. Default styles exist for all style families that are represented by the <style:style> element specified in section 14.1.

Default styles are represented by the <style:default-style> element. The only attribute supported by this element is style:family. Its meaning equals the one of the same attribute for the <style:style> element, and the same properties child elements are supported depending on the style family.

<define name="style-default-style">

<element name="style:default-style">

<ref name="style-style-content"/>

</element>

</define>

## Page Layout

The <style:page-layout> element specifies the physical properties of a page. This element contains a <style:page-layout-properties> element which specifies the formatting properties of the page and two optional elements that specify the properties of headers and footers.

<define name="style-page-layout">

<element name="style:page-layout">

<ref name="style-page-layout-attlist"/>

<optional>

<ref name="style-page-layout-properties"/>

</optional>

<optional>

<ref name="style-header-style"/>

</optional>

<optional>

<ref name="style-footer-style"/>

</optional>

</element>

</define>

The attributes that may be associated with the <style:page-layout> element are:

* Name
* Page usage

#### Name

The style:name attribute specifies the name of the page layout.

<define name="style-page-layout-attlist" combine="interleave">

<attribute name="style:name">

<ref name="styleName"/>

</attribute>

</define>

#### Page Usage

The style:page-usage attribute specifies the type of pages that the page master should generate.

<define name="style-page-layout-attlist" combine="interleave">

<optional>

<attribute name="style:page-usage" a:defaultValue="all">

<choice>

<value>all</value>

<value>left</value>

<value>right</value>

<value>mirrored</value>

</choice>

</attribute>

</optional>

</define>

### Header and Footer Styles

The header and footer style elements <style:header-style> and <style:footer-style> specify the formatting properties for headers and footers on a page. These elements must be contained within a page layout element. The contain a <style:header-footer-properties> element that contains the formatting properties of the header or footer.

<define name="style-header-style">

<element name="style:header-style">

<optional>

<ref name="style-header-footer-properties"/>

</optional>

</element>

</define>

<define name="style-footer-style">

<element name="style:footer-style">

<optional>

<ref name="style-header-footer-properties"/>

</optional>

</element>

</define>

## Master Pages

In text and spreadsheet documents, the <style:master-page> element contains the content of headers and footers. In these applications, a sequence of pages is generated by making use of a single master page or a set of master pages.

In drawing and presentation documents, the <style:master-page> element is used to define master pages as common backgrounds for **drawing pages**. Each drawing page here is directly linked to one master page, which is specified by the draw:master-page-name attribute of the drawing pages style.

Master pages are contained in the <office:master-styles> element. See also section 2.8.

All document must contain at least one master page element.

<define name="style-master-page">

<element name="style:master-page">

<ref name="style-master-page-attlist"/>

<optional>

<ref name="style-header"/>

<optional>

<ref name="style-header-left"/>

</optional>

</optional>

<optional>

<ref name="style-footer"/>

<optional>

<ref name="style-footer-left"/>

</optional>

</optional>

<optional>

<ref name="office-forms"/>

</optional>

<zeroOrMore>

<ref name="style-style"/>

</zeroOrMore>

<zeroOrMore>

<ref name="shape"/>

</zeroOrMore>

<optional>

<ref name="presentation-notes"/>

</optional>

</element>

</define>

The attributes that may be associated with the <style:master-page> element are:

* Page name
* Display name
* Page layout
* Page style
* Next style name

The elements that my be included in the <style:master-page> element are:

* Headers and Footers
* Forms
* Styles
* Shapes
* Presentation notes

#### Page Name

The style:name attribute specifies the name of a master page. Each master page is referenced using the page name. This attribute is required and the name specified must be unique.

<define name="style-master-page-attlist" combine="interleave">

<attribute name="style:name">

<ref name="styleName"/>

</attribute>

</define>

#### Display Name

The style:display-name attribute specifies the name of the master as it should appear in the user interface. In contrast to the style name itself, this name may contain arbitrary characters. If this attribute is not present, the display name equals the style name.

<define name="style-master-page-attlist" combine="interleave">

<optional>

<attribute name="style:display-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Page Layout

The style:page-layout-name attribute specifies a page layout which contains the sizes, border and orientation of the master page. See section 14.3 for details on page layouts.

<define name="style-master-page-attlist" combine="interleave">

<attribute name="style:page-layout-name">

<ref name="styleNameRef"/>

</attribute>

</define>

#### Page Style

In graphic applications, additional drawing page attributes my be assigned to a drawing page using the draw:style-name attribute. This attribute is optional. The fixed family for page styles is drawing-page. This is used to define an optional background filling.

<define name="style-master-page-attlist" combine="interleave">

<optional>

<attribute name="draw:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Next Style Name

For text and spreadsheet documents, the style:next-style-name attribute identifies the master page that is used for the next page if the current page is entirely filled. This attribute is optional. If the next style name is not specified, the current master page is used for the next page. The value of this attribute must be the name of another style:master-page element.

<define name="style-master-page-attlist" combine="interleave">

<optional>

<attribute name="style:next-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

### Headers and Footers

The header and footer elements specify the content of headers and footers. They are contained within a master page element. The <style:header> and <style:footer> elements contain the content of headers and footers. The two additional elements, <style:header-left> and <style:footer-left>, can be used to specify different content for left pages, if appropriate. If the latter two elements are missing, the content of the headers and footers on left and right pages is the same.

If the style:page-usage attribute associated with the page layout has a value of all or mirrored and there are no <style:header-left> or <style:footer-left> elements, the header and footer content is the same for left and right pages.

If the style:page-usage attribute has a value of left or right, the <style:header-left> or <style:footer-left> elements are ignored.

The content of headers and footers is either:

* Standard text content, for example paragraphs, tables, or lists. Such headers and footers usually are supported by text documents.
* A sequence of any of the following elements; <style:region-left>, <style:region-center> and <style:region-right>. These elements usually are supported by spreadsheet documents.
* Empty, which switches off the display of all headers or footers. It is not possible to switch off the display of headers or footers for left pages only.

<define name="style-header">

<element name="style:header">

<ref name="common-style-header-footer-attlist"/>

<ref name="header-footer-content"/>

</element>

</define>

<define name="style-footer">

<element name="style:footer">

<ref name="common-style-header-footer-attlist"/>

<ref name="header-footer-content"/>

</element>

</define>

<define name="style-header-left">

<element name="style:header-left">

<ref name="common-style-header-footer-attlist"/>

<ref name="header-footer-content"/>

</element>

</define>

<define name="style-footer-left">

<element name="style:footer-left">

<ref name="common-style-header-footer-attlist"/>

<ref name="header-footer-content"/>

</element>

</define>

<define name="header-footer-content">

<choice>

<group>

<ref name="text-tracked-changes"/>

<ref name="text-decls"/>

<zeroOrMore>

<choice>

<ref name="text-h"/>

<ref name="text-p"/>

<ref name="text-list"/>

<ref name="table-table"/>

<ref name="text-section"/>

<ref name="text-table-of-content"/>

<ref name="text-illustration-index"/>

<ref name="text-table-index"/>

<ref name="text-object-index"/>

<ref name="text-user-index"/>

<ref name="text-alphabetical-index"/>

<ref name="text-bibliography"/>

<ref name="text-index-title"/>

<ref name="change-marks"/>

</choice>

</zeroOrMore>

</group>

<group>

<optional>

<ref name="style-region-left"/>

</optional>

<optional>

<ref name="style-region-center"/>

</optional>

<optional>

<ref name="style-region-right"/>

</optional>

</group>

</choice>

</define>

#### Display

The style:display attribute specifies whether the header or footer is displayed or not.

<define name="common-style-header-footer-attlist" combine="interleave">

<optional>

<attribute name="style:display" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Regions

The region elements <style:region-left>, <style:region-center> and <style:region-right> specify three regions of a header or footer that are displayed left aligned, centered or right aligned. Each of these regions can contain a sequence of paragraphs.

<define name="style-region-left">

<element name="style:region-left">

<ref name="region-content"/>

</element>

</define>

<define name="style-region-center">

<element name="style:region-center">

<ref name="region-content"/>

</element>

</define>

<define name="style-region-right">

<element name="style:region-right">

<ref name="region-content"/>

</element>

</define>

<define name="region-content">

<zeroOrMore>

<ref name="text-p"/>

</zeroOrMore>

</define>

### Presentation Notes

The <presentation:notes> element is usually supported only by presentation applications, where each master page as well as each drawing page in a presentation can have an additional presentation notes page. The presentation notes page contains:

* A preview of the drawing page.
* Additional graphic shapes as contained in the <presentation:notes> element. While the <presentation:notes> may contain any kind of shapes, the only shape type that should be supported by presentation applications are text boxes (i.e., <draw:text-box> contained in a <draw:frame>).

<define name="presentation-notes">

<element name="presentation:notes">

<ref name="common-presentation-header-footer-attlist"/>

<ref name="presentation-notes-attlist"/>

<ref name="office-forms"/>

<zeroOrMore>

<ref name="shape"/>

</zeroOrMore>

</element>

</define>

#### Page Layout

The style:page-layout-name attribute specifies a page layout which contains the sizes, border and orientation of the notes page. See section 14.3 for details on page layouts.

<define name="presentation-notes-attlist" combine="interleave">

<optional>

<attribute name="style:page-layout-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Page Style

The attribute draw:style-name assigns an additional formatting attributes to a notes page by assigning a drawing page style. This attribute is optional. The fixed family for page styles is drawing-page.

<define name="presentation-notes-attlist" combine="interleave">

<optional>

<attribute name="draw:style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

#### Header Declaration

The presentation:use-header-name attribute specifies the name of the header field declaration (see section 9.11.2) that is used for all header fields (see section 9.10.1) that are displayed on the notes page. See also section 9.1.4.

#### Footer Declaration

The presentation:use-footer-name attribute specifies the name of the footer field declaration (see section 9.11.3) that is used for all footer fields (see section 9.10.2) that are displayed on the notes page. See also section 9.1.4.

#### Date and Time Declaration

The presentation:use-date-time-name attribute specifies the name of the date-time field declaration (see section 9.11.4) that is used for all date-time fields (see section 9.10.3) that are displayed on the notes page. See also section 9.1.4.

Example: Master page containing presentation notes.

<office:master-styles>

...

<style:master-page style:name="home" style:page-layout="default">

<style:style style:name="title" style:family="presentation">

<style:text-properties fo:font-style="italic"/>

</style:style>

<style:style style:name="subtitle" style:family="presentation"

style:parent-style-name="title">  
 <style:text-properties style:text-outline="true"/>

</style:style>

<draw:rectangle .../>

<presentation:notes>

<draw:text ...>this is a note</draw:text>

</presentation:notes>

</style:master-page>

...  
</office:master-styles>

## Table Templates

A table template is a set formatting properties, like borders, background color, and text properties that can be applied to a table when creating it. In contrast to other styles, it is not referenced by a table, but if a table is created, a set of table-cell styles is created from the table template. To change the formatting properties of a table, the cell styles and other styles themselves have to be changed. Table are contained in the <style:master-styles> element.

<define name="table-table-template">

<element name="table:table-template">

<ref name="table-table-template-attlist"/>

<optional>

<ref name="table-first-row"/>

</optional>

<optional>

<ref name="table-last-row"/>

</optional>

<optional>

<ref name="table-first-column"/>

</optional>

<optional>

<ref name="table-last-column"/>

</optional>

<choice>

<ref name="table-body"/>

<group>

<ref name="table-even-rows"/>

<ref name="table-odd-rows"/>

</group>

<group>

<ref name="table-even-columns"/>

<ref name="table-odd-columns"/>

</group>

</choice>

</element>

</define>

#### Style Name

The table:name attribute specifies the name of the table template.

<define name="table-table-template-attlist" combine="interleave">

<attribute name="text:name">

<ref name="string"/>

</attribute>

</define>

#### Corner Styles

The attributes table:first-row-start-column, table:first-row-end-column, table:last-row-start-column and table:last-row-end-column specify whether the cells in the four corners of the table should get the style from the row they are in or from the column. The possible values of these attributes are row and column.

<define name="table-table-template-attlist" combine="interleave">

<attribute name="text:first-row-start-column">

<ref name="rowOrCol"/>

</attribute>

</define>

<define name="table-table-template-attlist" combine="interleave">

<attribute name="text:first-row-end-column">

<ref name="rowOrCol"/>

</attribute>

</define>

<define name="table-table-template-attlist" combine="interleave">

<attribute name="text:last-row-start-column">

<ref name="rowOrCol"/>

</attribute>

</define>

<define name="table-table-template-attlist" combine="interleave">

<attribute name="text:last-row-end-column">

<ref name="rowOrCol"/>

</attribute>

</define>

<define name="rowOrCol">

<choice>

<value>row</value>

<value>column</value>

</choice>

</define>

### Row and Column Styles

The elements <table:first-row> and <table:last-row> specify the cell styles that shall be applied to the first and last row of a table. They have a text:style-name attribute that references these styles.

The optional text:paragraph-style-name attribute specifies the paragraph style which should be applied to the empty paragraphs created in the corresponding cells

The elements <table:first-col> and <table:last-col> do the same for the first and last table column.

For the remaining cells, the cells styles can either be specified by the <table:body> element, or by the <table:even-rows>/<table:odd-rows> or <table:even-columns>/<table:odd-columns> element pairs if different cell styles should be applied to even and odd rows or columns.

<define name="table-first-row">

<element name="table:first-row">

<ref name="common-table-template-attlist"/>

<empty/>

</element>

</define>

<define name="table-last-row">

<element name="table:last-row">

<ref name="common-table-template-attlist"/>

<empty/>

</element>

</define>

<define name="table-first-column">

<element name="table:first-column">

<ref name="common-table-template-attlist"/>

<empty/>

</element>

</define>

<define name="table-last-column">

<element name="table:last-column">

<ref name="common-table-template-attlist"/>

<empty/>

</element>

</define>

<define name="table-body">

<element name="table:body">

<ref name="common-table-template-attlist"/>

<empty/>

</element>

</define>

<define name="table-even-rows">

<element name="table:even-rows">

<ref name="common-table-template-attlist"/>

<empty/>

</element>

</define>

<define name="table-odd-rows">

<element name="table:odd-rows">

<ref name="common-table-template-attlist"/>

<empty/>

</element>

</define>

<define name="table-even-columns">

<element name="table:even-columns">

<ref name="common-table-template-attlist"/>

<empty/>

</element>

</define>

<define name="table-odd-columns">

<element name="table:odd-columns">

<ref name="common-table-template-attlist"/>

<empty/>

</element>

</define>

<define name="common-table-template-attlist" combine="interleave">

<attribute name="text:style-name">

<ref name="styleNameRef"/>

</attribute>

<attribute name="text:paragraph-style-name">

<optional>

<ref name="styleNameRef"/>

</optional>

</attribute>

</define>

## Font Face Declaration

OpenDocument font face declarations directly correspond to the @font-face font description of [CSS2] (see §15.3.1) and the <font-face> element of [SVG] (see §20.8.3), but have the following two extensions:

* OpenDocument font face declarations optionally may have an unique name. This name can be used inside styles (i.e., as attribute of <style:text-properties> element) as value of the style:font-name attribute to immediately select a font face declaration. If a font face declaration is referenced this way, the steps described in §15.5 the [CSS2] font matching algorithms for selecting a font declaration based on the font-family, font-style, font-variant, font-weight and font-size descriptors will not take place, but the referenced font face declaration is used directly.
* Some additional font descriptor attributes exist. They are described below.

With the exception mentioned above, conforming applications should implement the CSS2 font matching algorithm as described in described in §15.5 the [CSS2], but they may also implement variants of it. They are especially allowed to implement a font matching based only on the font face declarations, that is, a font matching that is not applied to every character independently but only once for each font face declaration. This is useful for editing applications, where a font matching based on characters might be too expensive.

<define name="style-font-face">

<element name="style:font-face">

<ref name="style-font-face-attlist"/>

<optional>

<ref name="svg-font-face-src"/>

</optional>

<optional>

<ref name="svg-definition-src"/>

</optional>

</element>

</define>

### CSS2/SVG Font Descriptors

Font face declarations support the font descriptor attributes and elements described in §20.8.3 of [SVG].

<define name="style-font-face-attlist" combine="interleave">

<optional>

<attribute name="svg:font-family">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="svg:font-style">

<ref name="fontStyle"/>

</attribute>

</optional>

<optional>

<attribute name="svg:font-variant">

<ref name="fontVariant"/>

</attribute>

</optional>

<optional>

<attribute name="svg:font-weight">

<ref name="fontWeight"/>

</attribute>

</optional>

<optional>

<attribute name="svg:font-stretch">

<choice>

<value>normal</value>

<value>ultra-condensed</value>

<value>extra-condensed</value>

<value>condensed</value>

<value>semi-condensed</value>

<value>semi-expanded</value>

<value>expanded</value>

<value>extra-expanded</value>

<value>ultra-expanded</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="svg:font-size">

<ref name="positiveLength"/>

</attribute>

</optional>

<optional>

<attribute name="svg:unicode-range"/>

</optional>

<optional>

<attribute name="svg:units-per-em">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:panose-1"/>

</optional>

<optional>

<attribute name="svg:stemv">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:stemh">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:slope">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:cap-height">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:x-height">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:accent-height">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:ascent">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:descent">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:widths"/>

</optional>

<optional>

<attribute name="svg:bbox"/>

</optional>

<optional>

<attribute name="svg:ideographic">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:alphabetic">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:mathematical">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:hanging">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:v-ideographic">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:v-alphabetic">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:v-mathematical">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:v-hanging">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:underline-position">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:underline-thickness">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:strikethrough-position">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:strikethrough-thickness">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:overline-position">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="svg:overline-thickness">

<ref name="integer"/>

</attribute>

</optional>

</define>

<define name="svg-font-face-src">

<element name="svg:font-face-src">

<oneOrMore>

<choice>

<ref name="svg-font-face-uri"/>

<ref name="svg-font-face-name"/>

</choice>

</oneOrMore>

</element>

</define>

<define name="svg-font-face-uri">

<element name="svg:font-face-uri">

<ref name="common-svg-font-face-xlink-attlist"/>

<zeroOrMore>

<ref name="svg-font-face-format"/>

</zeroOrMore>

</element>

</define>

<define name="svg-font-face-format">

<element name="svg:font-face-format">

<optional>

<attribute name="svg:string"/>

</optional>

<empty/>

</element>

</define>

<define name="svg-font-face-name">

<element name="svg:font-face-name">

<optional>

<attribute name="svg:name"/>

</optional>

<empty/>

</element>

</define>

<define name="svg-definition-src">

<element name="svg:definition-src">

<ref name="common-svg-font-face-xlink-attlist"/>

<empty/>

</element>

</define>

<define name="common-svg-font-face-xlink-attlist" combine="interleave">

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

<optional>

<attribute name="xlink:type" a:defaultValue="simple">

<value>simple</value>

</attribute>

</optional>

<optional>

<attribute name="xlink:actuate" a:defaultValue="onRequest">

<value>onRequest</value>

</attribute>

</optional>

</define>

### Name

The style:name attribute specifies the unique name of the font declaration. This name can be used inside styles (i.e., as an attribute of the <style:text-properties> element) as value of the style:font-name attribute to immediately select a font face declaration

<define name="style-font-face-attlist" combine="interleave">

<attribute name="style:name">

<ref name="string"/>

</attribute>

</define>

### Adornments

The style:font-adornments attributes specifies adornments, like bold or italic that can be used to locate a font in addition to the family name.

<define name="style-font-face-attlist" combine="interleave">

<optional>

<attribute name="style:font-adornments">

<ref name="string"/>

</attribute>

</optional>

</define>

### Font Family Generic

The style:font-family-generic attribute specifies a generic font family name. See section 15.4.15 for details.

<define name="style-font-face-attlist" combine="interleave">

<optional>

<attribute name="style:font-family-generic">

<ref name="fontFamilyGeneric"/>

</attribute>

</optional>

</define>

### Font Pitch

The style:font-pitch attribute specifies whether a font has a fixed or variable width. See section 15.4.17 for details.

<define name="style-font-face-attlist" combine="interleave">

<optional>

<attribute name="style:font-pitch">

<ref name="fontPitch"/>

</attribute>

</optional>

</define>

### Font Character Set

The style:font-charset attribute specifies the character set of a font. See section 15.4.18 for details.

<define name="style-font-face-attlist" combine="interleave">

<optional>

<attribute name="style:font-charset">

<ref name="textEncoding"/>

</attribute>

</optional>

</define>

## Data Styles

Data styles describe how to display different types of data, for example, a number or a date. The elements and attributes that are used to represent data styles are contained in the namespace urn:oasis:names:tc:opendocument:xmlns:datastyle:1.0. The prefix number denotes the data styles namespace.

This section describes the OpenDocument representation of the following data styles:

* Number style
* Currency style
* Percentage style
* Date style
* Boolean style
* Text style

### Number Style

The <number:number-style> element describes the style for decimal numbers.

This element can contain *one* of the following elements:

* <number:number>
* <number:scientific-number>
* <number:fraction>

These elements describe the display format of the number. The elements can be preceded or followed by <number:text> elements, which contain any additional text to be displayed before or after the number.

In addition, this element can contain a <style:text-properties> element and a <style:map> element.

<define name="number-number-style">

<element name="number:number-style">

<ref name="common-data-style-attlist"/>

<optional>

<ref name="style-text-properties"/>

</optional>

<optional>

<ref name="number-text"/>

</optional>

<optional>

<ref name="any-number"/>

<optional>

<ref name="number-text"/>

</optional>

</optional>

<zeroOrMore>

<ref name="style-map"/>

</zeroOrMore>

</element>

</define>

<define name="any-number">

<choice>

<ref name="number-number"/>

<ref name="number-scientific-number"/>

<ref name="number-fraction"/>

</choice>

</define>

See section 14.7.9 for information about the attributes that may be associated with the number style elements.

The following elements may be contained in the <number:number-style> element:

* Number
* Scientific number
* Fraction

#### Number

The <number:number> element specifies the display properties for a decimal number.

This element is contained in the <number:number-style> element. The <number:number> element can contain multiple <number:embedded-text> elements.

The number:decimal-replacement and number:display-factor attributes may be used with this element. See also section 14.7.11 for information about additional attributes that may be associate with the <number:number> element.

<define name="number-number">

<element name="number:number">

<ref name="number-number-attlist"/>

<ref name="common-decimal-places-attlist"/>

<ref name="common-number-attlist"/>

<zeroOrMore>

<ref name="number-embedded-text"/>

</zeroOrMore>

</element>

</define>

**Decimal Replacement**

If a number style specifies that decimal places are used but the number displayed is an integer, a replacement text may be displayed instead of the decimal places. The number:decimal-replacement attribute specifies the replacement text.

Some applications may supports replacement text only that consists of the same number of “-” characters as decimal places.

<define name="number-number-attlist" combine="interleave">

<optional>

<attribute name="number:decimal-replacement"/>

</optional>

</define>

**Display Factor**

The number:display-factor attribute specifies a factor by which each number is scaled (divided) before displaying. A factor of 1000, for example, causes numbers to be displayed in thousands.

Some applications may only support display factors of 1000 to the power of a non-negative integer number, that is 1, 1000, 1000000, 1000000000, etc.

<define name="number-number-attlist" combine="interleave">

<optional>

<attribute name="number:display-factor" a:defaultValue="1">

<ref name="double"/>

</attribute>

</optional>

</define>

#### Embedded Text

The <number:embedded-text> element specifies text that is displayed at one specific position within a number. This element is different to a grouping separator, which appears several times within a number.

This element is contained in the <number:number> element. The <number:number> element can contain multiple occurrences of the <number:embedded-text> element to describe text at different positions in the number.

<define name="number-embedded-text">

<element name="number:embedded-text">

<ref name="number-embedded-text-attlist"/>

<text/>

</element>

</define>

The number:position attribute specifies the position where the text appears.

**Position Attribute**

The position is counted from right to left, from before the decimal point if one exists, or else from the end of the number. For example, position number 1 indicates that the text is inserted before the last digit. Position number 2 indicates that the text is inserted before the second last digit, and so on.

<define name="number-embedded-text-attlist" combine="interleave">

<attribute name="number:position">

<ref name="integer"/>

</attribute>

</define>

#### Scientific Number

The <number:scientific-number> element specifies the display properties for a number style that should be displayed in scientific format.

This element is contained in the <number:number-style> element.

The number:min-exponent-digits attribute may be used with this element. See section 14.7.11 for information on additional attributes that may be associated with the <number:scientific-number> element.

<define name="number-scientific-number">

<element name="number:scientific-number">

<ref name="number-scientific-number-attlist"/>

<ref name="common-decimal-places-attlist"/>

<ref name="common-number-attlist"/>

<empty/>

</element>

</define>

**Minimum Exponent Digits**

The number:min-exponent-digits attribute specifies the minimum number of digits to use to display an exponent. This attribute is supported for the <number:scientific-number> element.

<define name="number-scientific-number-attlist" combine="interleave">

<optional>

<attribute name="number:min-exponent-digits">

<ref name="integer"/>

</attribute>

</optional>

</define>

#### Fraction

The <number:fraction> element specifies the display properties for a number style that should be displayed as a fraction.

This element is contained in the <number:number-style> element.

The number:min-numerator-digits and number:min-denominator-digits attributes may be used with this element. See section 14.7.11 for information on the attributes that may be associated with the <number:fraction> elements.

<define name="number-fraction">

<element name="number:fraction">

<ref name="number-fraction-attlist"/>

<ref name="common-number-attlist"/>

<empty/>

</element>

</define>

**Minimum Numerator Digits**

The number:min-numerator-digits attribute specifies the minimum number of digits to use to display the numerator in a fraction.

<define name="number-fraction-attlist" combine="interleave">

<optional>

<attribute name="number:min-numerator-digits">

<ref name="integer"/>

</attribute>

</optional>

</define>

**Minimum Denominator Digits**

The number:min-denominator-digits attribute specifies the minimum number of digits to use to display the denominator of a fraction.

<define name="number-fraction-attlist" combine="interleave">

<optional>

<attribute name="number:min-denominator-digits">

<ref name="integer"/>

</attribute>

</optional>

</define>

**Denominator Value**

The number:denominator-value attribute specifies an integer value that is used as denominator of a fraction. If this attribute is not present, the application may choose an arbitrary denominator value.

<define name="number-fraction-attlist" combine="interleave">

<optional>

<attribute name="number:denominator-value">

<ref name="integer"/>

</attribute>

</optional>

</define>

### Currency Style

The <number:currency-style> element describes the style for currency values.

This element can contain one <number:number> element and one <number:currency-symbol> element. It can also contain <number:text> elements , which display additional text, but it cannot contain two of these elements consecutively.

In addition, this element can contain a <style:text-properties> element and a <style:map> element.

<define name="number-currency-style">

<element name="number:currency-style">

<ref name="common-data-style-attlist"/>

<ref name="common-auto-reorder-attlist"/>

<optional>

<ref name="style-text-properties"/>

</optional>

<optional>

<ref name="number-text"/>

</optional>

<optional>

<choice>

<group>

<ref name="number-and-text"/>

<optional>

<ref name="currency-symbol-and-text"/>

</optional>

</group>

<group>

<ref name="currency-symbol-and-text"/>

<optional>

<ref name="number-and-text"/>

</optional>

</group>

</choice>

</optional>

<zeroOrMore>

<ref name="style-map"/>

</zeroOrMore>

</element>

</define>

<define name="currency-symbol-and-text">

<ref name="number-currency-symbol"/>

<optional>

<ref name="number-text"/>

</optional>

</define>

<define name="number-and-text">

<ref name="number-number"/>

<optional>

<ref name="number-text"/>

</optional>

</define>

See section 14.7.9 for information about the attributes that may be associated with the number style elements.

The following elements may be contained in the <number:currency-style> element:

* Number, see section 14.7.1.
* Currency symbol

#### Currency Symbol

The <number:currency-symbol> element determines whether or not a currency symbol is displayed in a currency style.

The content of this element is the text that is displayed as the currency symbol. If the element is empty or contains white space characters only, the default currency symbol for the currency style or the language and country of the currency style is displayed.

This element is contained in the <number:currency-style> element.

<define name="number-currency-symbol">

<element name="number:currency-symbol">

<ref name="number-currency-symbol-attlist"/>

<text/>

</element>

</define>

The number:language and number:country attributes may be used to specify the language and country of the currency symbol. See section 14.7.11 for information on the other attributes that may be associated with the currency style elements.

**Currency Language and Country Attributes**

If the currency symbol contained in a currency style belongs to a different language or country than the currency style itself, then the number:language and number:country attributes may be used to specify the language and country of the currency symbol.

<define name="number-currency-symbol-attlist" combine="interleave">

<optional>

<attribute name="number:language">

<ref name="languageCode"/>

</attribute>

</optional>

<optional>

<attribute name="number:country">

<ref name="countryCode"/>

</attribute>

</optional>

</define>

### Percentage Style

The <number:percentage-style> element describes the style for percentage values.

This element can contain one <number:number> element, which describes the display format for the percentage. The element can be preceded or followed by <number:text> elements, which contain any additional text to display before or after the percentage. Some applications require that at least one <number:text> element exist and that its text must contain a “%” character.

In addition, the <number:percentage-style> element can contain a <style:text-properties> element and a <style:map> element.

<define name="number-percentage-style">

<element name="number:percentage-style">

<ref name="common-data-style-attlist"/>

<optional>

<ref name="style-text-properties"/>

</optional>

<optional>

<ref name="number-text"/>

</optional>

<optional>

<ref name="number-and-text"/>

</optional>

<zeroOrMore>

<ref name="style-map"/>

</zeroOrMore>

</element>

</define>

See section 14.7.9 for information on the attributes that may be associated with the percentage style element.

### Date Style

The <number:date-style> element describes the style for date values.

This element can contain *one* instance of each of the following elements: <number:day>, <number:month>, <number:year>, <number:era>, <number:day-of-week>, <number:week-of-year>, <number:quarter>, <number:hours>, <number:minutes>, <number:seconds>, and <number:am-pm>.

The <number:date-style> element can also contain <number:text> elements, which display additional text, but it cannot contain two of these elements consecutively. In addition, it can contain a <style:text-properties> element and a <style:map> element.

<define name="number-date-style">

<element name="number:date-style">

<ref name="common-data-style-attlist"/>

<ref name="common-auto-reorder-attlist"/>

<ref name="common-format-source-attlist"/>

<optional>

<ref name="style-text-properties"/>

</optional>

<!-- This DTD does not reflect the fact that some elements must not -->

<!-- occur more than once. -->

<optional>

<ref name="number-text"/>

</optional>

<oneOrMore>

<ref name="any-date"/>

<optional>

<ref name="number-text"/>

</optional>

</oneOrMore>

<zeroOrMore>

<ref name="style-map"/>

</zeroOrMore>

</element>

</define>

<define name="any-date">

<choice>

<ref name="number-day"/>

<ref name="number-month"/>

<ref name="number-year"/>

<ref name="number-era"/>

<ref name="number-day-of-week"/>

<ref name="number-week-of-year"/>

<ref name="number-quarter"/>

<ref name="number-hours"/>

<ref name="number-am-pm"/>

<ref name="number-minutes"/>

<ref name="number-seconds"/>

</choice>

</define>

See section 14.7.9 for information on the attributes that may be associated with the date style elements.

The <number:date-style> element can contain the following elements:

* <number:day> – day of month
* <number:month> – month
* <number:year> – year
* <number:era> – era
* <number:day-of-week> – day of week
* <number:week-of-year> – week of year
* <number:quarter> – quarter

#### Day of Month

The <number:day> element specifies the day of the month in a date.

If this element is used, it should be contained in the <number:date-style> element.

<define name="number-day">

<element name="number:day">

<ref name="number-day-attlist"/>

<ref name="common-calendar-attlist"/>

<empty/>

</element>

</define>

The number:style attribute may be used with this element. See section 14.7.11 for information on the other attributes that may be associated with the element.

**Format Attribute**

The number:style attribute specifies whether the day of month element is displayed in short or long format. The value of this attribute can be short or long. The meaning of these values depends on the value of the number:format-source attribute that is attached to the date style.

For days, if the value of the number:format-source attribute is fixed:

* short means that the day of the month is displayed using one or two digits
* long means that the day of the month is displayed using two digits

<define name="number-day-attlist" combine="interleave">

<optional>

<attribute name="number:style" a:defaultValue="short">

<choice>

<value>short</value>

<value>long</value>

</choice>

</attribute>

</optional>

</define>

#### Month

The <number:month> element specifies the month in a date.

If used, this element must be contained in the <number:date-style> element.

<define name="number-month">

<element name="number:month">

<ref name="number-month-attlist"/>

<ref name="common-calendar-attlist"/>

<empty/>

</element>

</define>

The number:textual and number:style attributes may be used with this element. See section 14.7.11 for information on the other attributes that may be associated with the element.

**Textual Representation Attribute**

The number:textual attribute determines whether the name or number of a month is displayed in the month element of a date. If the value of this attribute value is true, the name of the month is displayed. If the attribute value is false, the number of the month is displayed.

<define name="number-month-attlist" combine="interleave">

<optional>

<attribute name="number:textual" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

**Possessive Form Attribute**

The number:possessive-form attribute determines whether the month is displayed as is (e.g., as in "17 January 2004") or using the possessive form (e.g., as in "17th day of January"). If the value of this attribute value is true, the name of the month is displayed in possessive form. If the attribute value is false, the number of the month is displayed as is.

<define name="number-month-attlist" combine="interleave">

<optional>

<attribute name="number:possessive-form" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

**Format Attribute**

The number:style attribute specifies whether the month element is displayed in short or long format. The value of this attribute can be short or long. The meaning of these values depends on the value of the number:format-source attribute that is attached to the date style.

For months, if the value of the number:format-source attribute is fixed:

* short means that the abbreviated name of the month is displayed or the month is displayed using one or two digits
* long means that the full name of the month is displayed or the month is displayed using two digits

<define name="number-month-attlist" combine="interleave">

<optional>

<attribute name="number:style" a:defaultValue="short">

<choice>

<value>short</value>

<value>long</value>

</choice>

</attribute>

</optional>

</define>

#### Year

The <number:year> element specifies the year in the date.

If used, this element must be contained in the <number:date-style> element.

<define name="number-year">

<element name="number:year">

<ref name="number-year-attlist"/>

<ref name="common-calendar-attlist"/>

<empty/>

</element>

</define>

The number:style attribute may be used with this element. See section 14.7.11 for information on the other attributes that may be associated with the element.

**Format Attribute**

The number:style attribute specifies whether the year element is displayed in short or long format. The value of this attribute can be short or long. The meaning of these values depends on the value of the number:format-source attribute that is attached to the date style.

For years, if the value of the number:format-source attribute is fixed:

* short means that the year is displayed using two digits
* long means that the year is displayed using four digits

<define name="number-year-attlist" combine="interleave">

<optional>

<attribute name="number:style" a:defaultValue="short">

<choice>

<value>short</value>

<value>long</value>

</choice>

</attribute>

</optional>

</define>

#### Era

The <number:era> element specifies the era in which the year is counted.

If used, this element must be contained in the <number:date-style> element.

<define name="number-era">

<element name="number:era">

<ref name="number-era-attlist"/>

<ref name="common-calendar-attlist"/>

<empty/>

</element>

</define>

The number:style attribute may be used with this element. See section 14.7.11 for information on the other attributes that may be associated with the element.

**Format Attribute**

The number:style attribute specifies whether the era element is displayed in short or long format. The value of this attribute can be short or long. The meaning of these values depends on the value of the number:format-source attribute that is attached to the date style.

For eras, if the value of the number:format-source attribute is fixed:

* short means that the abbreviated era name is used
* long means that the full era name is used

<define name="number-era-attlist" combine="interleave">

<optional>

<attribute name="number:style" a:defaultValue="short">

<choice>

<value>short</value>

<value>long</value>

</choice>

</attribute>

</optional>

</define>

#### Day Of Week

The <number:day-of-week> element specifies the day of the week in a date.

If used, this element must be contained in the <number:date-style> element.

<define name="number-day-of-week">

<element name="number:day-of-week">

<ref name="number-day-of-week-attlist"/>

<ref name="common-calendar-attlist"/>

<empty/>

</element>

</define>

The number:style attribute may be used with this element. See section 14.7.11 for information on the other attributes that may be associated with the element.

**Format Attribute**

The number:style attribute specifies whether the day of week element is displayed in short or long format.

The value of this attribute can be short or long. The meaning of these values depends on the value of the number:format-source attribute that is attached to the date style.

For days of the week, the value of the number:format-source attribute is fixed:

* short means that the abbreviated name of the day is displayed
* long means that the full name of the day is displayed

<define name="number-day-of-week-attlist" combine="interleave">

<optional>

<attribute name="number:style" a:defaultValue="short">

<choice>

<value>short</value>

<value>long</value>

</choice>

</attribute>

</optional>

</define>

#### Week Of Year

The <number:week-of-year> element specifies the week of the year in the date.

If used, this element must be contained in the <number:date-style> element.

<define name="number-week-of-year">

<element name="number:week-of-year">

<ref name="common-calendar-attlist"/>

<empty/>

</element>

</define>

See section 14.7.11 for information on the the attributes that may be associated with the element.

#### Quarter

The <number:quarter> element specifies the quarter of the year in the date.

If used, this element must be contained in the <number:date-style> element.

<define name="number-quarter">

<element name="number:quarter">

<ref name="number-quarter-attlist"/>

<ref name="common-calendar-attlist"/>

<empty/>

</element>

</define>

The number:style attribute may be used with this element. See section 14.7.11 for information on the other attributes that may be associated with the element.

**Format Attribute**

The number:style attribute specifies whether the quarter element is displayed in short or long format.

The value of this attribute can be short or long. The meaning of these values depends on the value of the number:format-source attribute that is attached to the date style.

For quarters, if the value of the number:format-source attribute is fixed:

* short means that the abbreviated name of the quarter is displayed, for example, Q1
* long means that the full name of the quarter is displayed, for example, Quarter 1

<define name="number-quarter-attlist" combine="interleave">

<optional>

<attribute name="number:style" a:defaultValue="short">

<choice>

<value>short</value>

<value>long</value>

</choice>

</attribute>

</optional>

</define>

### Time Style

The <number:time-style> element describes the style for time values.

This element can contain *one* instance of any of the following elements: <number:hours>, <number:minutes>, <number:seconds> and <number:am-pm>.

The <number:time-style> element can also contain <number:text> elements , which display additional text, but it cannot contain two of these elements consecutively. In addition, it can contain a <style:text-properties> element and a <style:map> element.

<define name="number-time-style">

<element name="number:time-style">

<ref name="number-time-style-attlist"/>

<ref name="common-data-style-attlist"/>

<ref name="common-format-source-attlist"/>

<optional>

<ref name="style-text-properties"/>

</optional>

<!-- This DTD does not reflect the fact that some elements must not -->

<!-- occur more than once. -->

<optional>

<ref name="number-text"/>

</optional>

<oneOrMore>

<ref name="any-time"/>

<optional>

<ref name="number-text"/>

</optional>

</oneOrMore>

<zeroOrMore>

<ref name="style-map"/>

</zeroOrMore>

</element>

</define>

<define name="any-time">

<choice>

<ref name="number-hours"/>

<ref name="number-am-pm"/>

<ref name="number-minutes"/>

<ref name="number-seconds"/>

</choice>

</define>

See section 14.7.9 for information on the attributes that may be associated with the time style elements.

The following elements can be contained in the <number:time-style> element:

* <number:hours> – hours
* <number:minutes> – minutes
* <number:seconds> – seconds
* <number:am-pm> – am/pm

#### Time Value Truncation

If a time or duration is too large to be displayed using the default value range for a time component, (0 to 23 for <number:hours>), the number:truncate-on-overflow attribute may be used to specify whether the time or duration value should be truncated or whether the value range becomes extended.

<define name="number-time-style-attlist" combine="interleave">

<optional>

<attribute name="number:truncate-on-overflow" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Hours

The <number:hours> element specifies if hours are displayed as part of a date or time.

<define name="number-hours">

<element name="number:hours">

<ref name="number-hours-attlist"/>

<empty/>

</element>

</define>

**Format Attribute**

The number:style attribute specifies whether the hours element is displayed in short or long format.

The value of this attribute can be short or long. The meaning of these values depends on the value of the number:format-source attribute that is attached to the time style.

For hours, if the value of the number:format-source attribute is fixed:

* short means that the hours are displayed using at least one digit
* long means that the hours are displayed using at least two digits

<define name="number-hours-attlist" combine="interleave">

<optional>

<attribute name="number:style" a:defaultValue="short">

<choice>

<value>short</value>

<value>long</value>

</choice>

</attribute>

</optional>

</define>

#### Minutes

The <number:minutes> element specifies if minutes are displayed as part of a date or time.

<define name="number-minutes">

<element name="number:minutes">

<ref name="number-minutes-attlist"/>

<empty/>

</element>

</define>

**Format Attribute**

The number:style attribute specifies whether the minutes element is displayed in short or long format.

The value of this attribute can be short or long. The meaning of these values depends on the value of the number:format-source attribute that is attached to the time style.

For minutes, if the value of the number:format-source attribute is fixed:

* short means that the minutes are displayed using at least one digit
* long means that the minutes are displayed using at least two digits

<define name="number-minutes-attlist" combine="interleave">

<optional>

<attribute name="number:style" a:defaultValue="short">

<choice>

<value>short</value>

<value>long</value>

</choice>

</attribute>

</optional>

</define>

#### Seconds

The <number:seconds> element specifies if seconds are displayed as part of a date or time.

<define name="number-seconds">

<element name="number:seconds">

<ref name="number-seconds-attlist"/>

<empty/>

</element>

</define>

**Format Attribute**

The number:style attribute specifies whether the seconds element is displayed in short or long format.

The value of this attribute can be short or long. The meaning of these values depends on the value of the number:format-source attribute that is attached to the time style.

For seconds, if the value of the number:format-source attribute is fixed:

* short means that the seconds are displayed using at least one digit
* long means that the seconds are displayed using at least two digits

<define name="number-seconds-attlist" combine="interleave">

<optional>

<attribute name="number:style" a:defaultValue="short">

<choice>

<value>short</value>

<value>long</value>

</choice>

</attribute>

</optional>

</define>

**Decimal Places Attribute**

The number:decimal-places attribute determines the number of decimal places to use when displaying fractions.

If this attribute is not present or if the value of the attribute is 0, fractions are not displayed.

<define name="number-seconds-attlist" combine="interleave">

<optional>

<attribute name="number:decimal-places" a:defaultValue="0">

<ref name="integer"/>

</attribute>

</optional>

</define>

#### AM/PM

The <number:am-pm> element specifies if AM/PM is included as part of the date or time.

If a <number:am-pm> element is contained in a date or time style, hours are displayed using values from 1 to 12 only.

<define name="number-am-pm">

<element name="number:am-pm">

<empty/>

</element>

</define>

### Boolean Style

The <number:boolean-style> element describes the style for Boolean values.

This element can contain one <number:boolean> element, which can be preceded or followed by <number:text> elements. In addition, it can contain a <style:text-properties> element and a <style:map> element.

<define name="number-boolean-style">

<element name="number:boolean-style">

<ref name="common-data-style-attlist"/>

<optional>

<ref name="style-text-properties"/>

</optional>

<optional>

<ref name="number-text"/>

</optional>

<optional>

<ref name="number-boolean"/>

<optional>

<ref name="number-text"/>

</optional>

</optional>

<zeroOrMore>

<ref name="style-map"/>

</zeroOrMore>

</element>

</define>

#### Boolean

The <number:boolean> element contains the Boolean value of a Boolean style.

<define name="number-boolean">

<element name="number:boolean">

<empty/>

</element>

</define>

### Text Style

The <number:text-style> element describes the style for displaying text.

This element can contain any number of <number:text-content> elements. It can also contain <number:text> elements , which display additional text, but it cannot contain two of these elements consecutively. In addition, it can contain a <style:text-properties> element and a <style:map> element. The <number:text-content> elements represent the variable text content to display, while the <number:text> elements contain any additional fixed text to display.

<define name="number-text-style">

<element name="number:text-style">

<ref name="common-data-style-attlist"/>

<optional>

<ref name="style-text-properties"/>

</optional>

<optional>

<ref name="number-text"/>

</optional>

<zeroOrMore>

<ref name="number-text-content"/>

<optional>

<ref name="number-text"/>

</optional>

</zeroOrMore>

<zeroOrMore>

<ref name="style-map"/>

</zeroOrMore>

</element>

</define>

See section 14.7.9 for information on the attributes that may be associated with the text style elements.

#### Fixed Text

The <number:text> element contains any fixed text for a data style.

This element is contained in all data styles element.

<define name="number-text">

<element name="number:text">

<text/>

</element>

</define>

#### Text Content

The <number:text-content> element contains the variable text content of a text style.

<define name="number-text-content">

<element name="number:text-content">

<empty/>

</element>

### Common Data Style Attributes

Many of the data style attributes are applicable to more than one data style element. The following data style attributes are common to many of the data style elements:

* Name
* Language
* Country
* Title
* Volatility
* Automatic Order
* Format Source
* Transliteration

#### Name

The style:name attribute specifies the name of the data style. It can be used with all data style elements.

<define name="common-data-style-attlist" combine="interleave">

<attribute name="style:name">

<ref name="styleName"/>

</attribute>

</define>

#### Display Name

The style:display-name attribute specifies the name of the style as it should appear in the user interface. In contrast to the style name itself, this name may contain arbitrary characters. If this attribute is not present, the display name equals the style name.

The style:display-name attribute can be used with all data style elements.

<define name="style-data-style-attlist" combine="interleave">

<optional>

<attribute name="style:display-name">

<ref name="string"/>

</attribute>

</optional>

</define>

#### Language

The number:language attribute specifies the language of the style. The value of the attribute is a language code in conformance with [RFC3066]. The language code is used to retrieve information about any display properties that are language-dependent. The language attribute can be used with all data style elements.

If a language code is not specified, either the system settings or the setting for the system's language are used, depending on the property whose value should be retrieved.

<define name="common-data-style-attlist" combine="interleave">

<optional>

<attribute name="number:language">

<ref name="languageCode"/>

</attribute>

</optional>

</define>

#### Country

The number:country attribute specifies the country of the style. The value of the attribute is a country code in conformance with [RFC3066]. The country code is used to retrieve information about any display properties that are country-dependent. The language attribute can be used with all data style elements.

If a country is not specified, either the system settings or the setting for the system's country are used, depending on the property whose value should be retrieved.

<define name="common-data-style-attlist" combine="interleave">

<optional>

<attribute name="number:country">

<ref name="countryCode"/>

</attribute>

</optional>

</define>

#### Title

The number:title attribute specifies the title of the data style. It can be used with all data style elements.

<define name="common-data-style-attlist" combine="interleave">

<optional>

<attribute name="number:title"/>

</optional>

</define>

#### Volatility

Sometimes when a document is opened, not all of the styles contained in the document are actually referenced. The application may retain or discard this unused styles. This may be controlled by the style:volatile attribute, that is supported by all data style elements.

If the value of the attribute is true, the application keeps the style if possible. If the value is false, the application discards the unused styles.

<define name="common-data-style-attlist" combine="interleave">

<optional>

<attribute name="style:volatile">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Shadow

The shadow attribute style:shadow specifies the shadow of the page. See section 15.5.28 for detailed information on this attribute.

<define name="style-page-layout-properties-attlist" combine="interleave">

<ref name="common-shadow-attlist"/>

</define>

### Background

The background attribute fo:background-color and the background element <style:background-image> specify the background properties of the page. See sections 15.5.23 and 15.5.24 for detailed information on this attribute and element.

<define name="style-page-layout-properties-attlist" combine="interleave">

<ref name="common-background-color-attlist"/>

</define>

<define name="style-page-layout-properties-elements" combine="interleave">

<ref name="style-background-image"/>

</define>

### Columns

The <style:columns> element specifies if the page contains columns. See section 15.7.3 for detailed information on this element.

<define name="style-page-layout-properties-elements" combine="interleave">

<ref name="style-columns"/>

</define>

### Register-truth

The style:register-truth-ref-style-name attribute references a paragraph style. The line distance specified of the paragraph style is used as the reference line distance for all paragraphs that have the register-truth feature enabled.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:register-truth-ref-style-name">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

### Print

The style:print attribute specifies which components in a spreadsheet document to print.

The value of this attribute is a list of the following values separated by blanks:

* headers
* grid
* annotations
* objects (including graphics)
* charts
* drawings
* formulas
* zero-values

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:print">

<list>

<zeroOrMore>

<choice>

<value>headers</value>

<value>grid</value>

<value>annotations</value>

<value>objects</value>

<value>charts</value>

<value>drawings</value>

<value>formulas</value>

<value>zero-values</value>

</choice>

</zeroOrMore>

</list>

</attribute>

</optional>

</define>

### Print Page Order

The style:print-page-order attribute specifies the order in which data in a spreadsheet is numbered and printed when the data does not fit on one printed page.

The value of this attribute can be ttb or ltr. Use ttb to print the data vertically from the left column to the bottom row of the sheet. Use ltr to print the data horizontally from the top row to the right column of the sheet.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:print-page-order">

<choice>

<value>ttb</value>

<value>ltr</value>

</choice>

</attribute>

</optional>

</define>

### First Page Number

The style:first-page-number specifies the number of the first page of a text or graphical document, or for the first page of a table within a spreadsheet document.

The value of this attribute can be an integer or continue. If the value is continue, the page number is the preceding page number incremented by 1. The default first page number is 1.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:first-page-number">

<choice>

<ref name="positiveInteger"/>

<value>continue</value>

</choice>

</attribute>

</optional>

</define>

### Scale

The style:scale-to and style:scale-to-pages attributes specify how the application should scale spreadsheet documents for printing.

The style:scale-to attribute specifies that the document is scaled to a percentage value, where 100% equals no scaling. When using this attribute, all pages are enlarged or reduced in size while printing.

The style:scale-to-pages attribute specifies the number of pages on which the the document should be printed. The document is then scaled to fit the defined number of pages.

If none of these attributes are present, the document is not scaled.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:scale-to">

<ref name="percent"/>

</attribute>

</optional>

<optional>

<attribute name="style:scale-to-pages">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

### Table Centering

The style:table-centering attribute specifies how the application should center tables on the page. This attribute only applies to spreadsheet documents.

The value of this attribute can be horizontal, vertical, both, or none. If this attribute is not present, the table is not centered.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:table-centering">

<choice>

<value>horizontal</value>

<value>vertical</value>

<value>both</value>

<value>none</value>

</choice>

</attribute>

</optional>

</define>

### Maximum Footnote Height

The style:footnote-max-height attribute specifies the maximum amount of space on the page that a footnote can occupy. The value of the attribute is a length, which determines the maximum height of the footnote area.

If the value of this attribute is set to 0in, there is no limit to the amount of space that the footnote can occupy.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:footnote-max-height">

<ref name="length"/>

</attribute>

</optional>

</define>

### Writing Mode

The style:writing mode attribute specifies the writing mode that should is used by all paragraphs that appear on the page. See section 15.5.36 for details. The value page is not allowed within page layouts.

<define name="style-page-layout-properties-attlist" combine="interleave">

<ref name="common-writing-mode-attlist"/>

</define>

### Footnote Separator

The <style:footnote-sep> element describes the line that separates the footnote area from the body text area on a page.

The <style:footnote-sep> element supports the following attributes:

* style:width – specifies the width or thickness of the line.
* style:rel-width – specifies the length of the line as a percentage of the body text area.
* style:color – specifies the color of the line.
* style:adjustment – specifies how the line is aligned on the page, that is left, right, or center.
* style:distance-before-sep – specifies the space between the body text area and the footnote line.
* style:distance-after-sep – specifies the space between the footnote line and the footnote text.
* style:line-style – specifies the style of the line.

<define name="style-page-layout-properties-elements" combine="interleave">

<ref name="style-footnote-sep"/>

</define>

<define name="style-footnote-sep">

<optional>

<element name="style:footnote-sep">

<ref name="style-footnote-sep-attlist"/>

<empty/>

</element>

</optional>

</define>

<define name="style-footnote-sep-attlist" combine="interleave">

<optional>

<attribute name="style:width">

<ref name="length"/>

</attribute>

</optional>

<optional>

<attribute name="style:rel-width">

<ref name="percent"/>

</attribute>

</optional>

<optional>

<attribute name="style:color">

<ref name="color"/>

</attribute>

</optional>

<optional>

<attribute name="style:line-style">

<ref name="lineStyle"/>

</attribute>

</optional>

<optional>

<attribute name="style:adjustment" a:defaultValue="left">

<choice>

<value>left</value>

<value>center</value>

<value>right</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="style:distance-before-sep">

<ref name="length"/>

</attribute>

</optional>

<optional>

<attribute name="style:distance-after-sep">

<ref name="length"/>

</attribute>

</optional>

</define>

### Layout Grid

The style:layout-grid-mode property enables Asian layout grids. It has the following values:

* none: Disables the layout grid.
* lines: Enables a line layout, this is, the page is divided in a fixed number of lines. The exact number of lines depends on the other grid layout properties described below. There is no space between the layout grid lines. The layout grid itself is centered on the page.
* both: Like lines, except that the lines are divided into square cells. The number of cells per line depends on the line height, where the line height is the sum of the base height and the ruby height as specified below. Within a layout cell, nor more than one Asian [UNICODE] character is displayed. Asian characters that do not fit into a single cell are displayed centered into as many cells as required. Non Asian text is centered within as many cells as required.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:layout-grid-mode">

<choice>

<value>none</value>

<value>line</value>

<value>both</value>

</choice>

</attribute>

</optional>

</define>

### Layout Grid Base Height

The style:layout-grid-base-height attribute specifies the height reserved in the layout grid lines for non ruby text.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:layout-grid-base-height">

<ref name="length"/>

</attribute>

</optional>

</define>

### Layout Grid Ruby Height

The style:layout-grid-ruby-height attribute specifies the height reserved in the layout grid lines for ruby text.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:layout-grid-ruby-height">

<ref name="length"/>

</attribute>

</optional>

</define>

### Layout Grid Lines

The style:layout-grid-lines attribute specifies the number of layout grid lines per page. The number of lines actually displayed may be smaller than specified if the page has not enough space to display the specified number of lines with the specified line height (i.e., the sum of the base and ruby height).

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:layout-grid-lines">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

### Layout Grid Color

The style:layout-grid-color attribute specifies the color of the layout grid border lines.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:layout-grid-color">

<ref name="color"/>

</attribute>

</optional>

</define>

### Layout Grid Ruby Below

The style:layout-grid-ruby-below attribute specifies whether ruby text is displayed above or below the base text.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:layout-grid-ruby-below">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Layout Grid Print

The style:layout-grid-ruby-print attribute specifies whether the layout grid border lines are printed.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:layout-grid-print">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Layout Grid Display

The style:layout-grid-ruby-print attribute specifies whether the layout grid border lines are displayed.

<define name="style-page-layout-properties-attlist" combine="interleave">

<optional>

<attribute name="style:layout-grid-display">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## Header Footer Formatting Properties

The properties described in this section can be contained within the header and footer style elements contained in page layouts (see section 14.3) They are contained in a <style:header-footer-properties> element.

These attributes are:

* Fixed and minimum heights - see section 15.27
* Left and right margins - see section 15.5.17
* Bottom (for headers only) and top (for footers only) margins - see section 15.5.20.
* Borders - see section 15.5.25 and 15.5.26
* Shadows – see section 15.5.28
* Backgrounds – see section 15.5.23 and 15.5.24.
* Dynamic-Spacing

<define name="style-header-footer-properties">

<element name="style:header-footer-properties">

<ref name="style-header-footer-properties-content"/>

</element>

</define>

<define name="style-header-footer-properties-content">

<ref name="style-properties-content"/>

</define>

<define name="style-header-footer-properties-content-strict">

<ref name="style-header-footer-properties-attlist"/>

<ref name="style-header-footer-properties-elements"/>

</define>

### Fixed and Minimum heights

The attributes svg:height and fo:min-height properties specify a fixed or a minimum height for the header or footer.

<define name="style-header-footer-properties-attlist" combine="interleave">

<optional>

<attribute name="svg:height">

<ref name="length"/>

</attribute>

</optional>

<optional>

<attribute name="fo:min-height">

<ref name="length"/>

</attribute>

</optional>

</define>

### Margins

The margins attributes fo:margin, fo:margin-top, fo:margin-bottom, fo:margin-left and fo:margin-right specify the size of the header and footer margins. See sections 15.5.17, 15.5.20 and 15.5.21 for detailed information on these attributes. Percentage values are not supported. Bottom margins are only supported for headers, top margins only for footers.

<define name="style-header-footer-properties-attlist" combine="interleave">

<ref name="common-horizontal-margin-attlist"/>

<ref name="common-vertical-margin-attlist"/>

<ref name="common-margin-attlist"/>

</define>

### Border

The border attributes fo:border, fo:border-top, fo:border-bottom, fo:border-left and fo:border-right specify the border properties of the headers and footers. See section 15.5.25 for detailed information on these attributes.

<define name="style-header-footer-properties-attlist" combine="interleave">

<ref name="common-border-attlist"/>

</define>

### Border Line Width

If a page contains borders, the border line width attributes style:border-line-width, style:border-line-width-top, style:border-line-width-bottom, style:border-line-width-left and style:border-line-width-right specify the properties of the border lines of the headers and footers. See section 15.5.26 for detailed information on these attributes.

<define name="style-header-footer-properties-attlist" combine="interleave">

<ref name="common-border-line-width-attlist"/>

</define>

### Padding

The padding attributes fo:padding, fo:padding-top, fo:padding-bottom, fo:padding-left and fo:padding-right specify the padding properties of the headers and footers. See section 15.5.27 for detailed information on these attributes.

<define name="style-header-footer-properties-attlist" combine="interleave">

<ref name="common-padding-attlist"/>

</define>

### Background

The background attribute fo:background-color and the background element <style:background-image> specify the background properties of the header or footer. See sections 15.5.23 and 15.5.24 for detailed information on this attribute and element.

<define name="style-header-footer-properties-attlist" combine="interleave">

<ref name="common-background-color-attlist"/>

</define>

<define name="style-header-footer-properties-elements" combine="interleave">

<ref name="style-background-image"/>

</define>

### Shadow

The shadow attribute style:shadow specifies the shadow of the headers and footers. See section 15.5.28 for detailed information on this attribute.

<define name="style-header-footer-properties-attlist" combine="interleave">

<ref name="common-shadow-attlist"/>

</define>

### Dynamic Spacing

The style:dynamic-spacing property specifies whether or not the header or footer grows into the space between the page body and the header or footer before the height of the page body becomes smaller. If the value of this attribute is true, the header or footers first grows into the space between the header and footer and the page body.

<define name="style-header-footer-properties-attlist" combine="interleave">

<optional>

<attribute name="style:dynamic-spacing">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## Text Formatting Properties

The properties described in this section can be contained within text styles (see section 14.8.1), but also within other styles, like paragraph styles (see section 14.8.2) or cell styles (see section 14.12.4) They are contained in a <style:text-properties> element.

<define name="style-text-properties">

<element name="style:text-properties">

<ref name="style-text-properties-content"/>

</element>

</define>

<define name="style-text-properties-content">

<ref name="style-properties-content"/>

</define>

<define name="style-text-properties-content-strict">

<ref name="style-text-properties-attlist"/>

<ref name="style-text-properties-elements"/>

</define>

<define name="style-text-properties-elements">

<empty/>

</define>

### Font Variant

Use the fo:font-variant property to switch the option to display text as small capitalized letters on or off. See §7.8.8 of [XSL] for details.

For some implementations, the fo:font-variant and fo:text-transform properties are mutually exclusive. If both properties are used simultaneously, the result is undefined except that the fo:text-transform value is none and the fo:font-variant value is normal.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="fo:font-variant">

<ref name="fontVariant"/>

</attribute>

</optional>

</define>

<define name="fontVariant">

<choice>

<value>normal</value>

<value>small-caps</value>

</choice>

</define>

### Text Transformations

Use the fo:text-transform property to describe text transformations to uppercase, lowercase, and capitalization. See §7.16.6 of [XSL] for details.

For some implementations, the fo:font-variant and fo:text-transform properties are mutually exclusive. If both properties are attached used simultaneously, the result is undefined except that the fo:text-transform value is none and the fo:font-variant value is normal.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="fo:text-transform">

<choice>

<value>none</value>

<value>lowercase</value>

<value>uppercase</value>

<value>capitalize</value>

</choice>

</attribute>

</optional>

</define>

### Color

Use the fo:color property to specify the foreground color of text. See §7.17.1 of [XSL] for details.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="fo:color">

<ref name="color"/>

</attribute>

</optional>

</define>

### Window Font Color

Use the style:use-window-font-color property to specify whether or not the window foreground color should be as used as the foreground color for a light background color and white for a dark background color.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:use-window-font-color">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Text Outline

Use the style:text-outline property to specify whether to display an outline of text or the text itself. This attribute can have a value of true or false.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:text-outline">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Line-Through Type

Use the style:text-line-through-type property to specify whether text is lined through, and if so, whether a single or double line will be used. See section 15.4.28 for details.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:text-line-through-type">

<ref name="lineType"/>

</attribute>

</optional>

</define>

### Line-Through Style

Use the style:text-line-through-style property to specify if and how text is lined through. This property is similar to the [CSS3Text] text-line-style property, except that it has the additional value long-dash and that it does not have the value double. Instead of this, the attribute style:text:line-through-type can be used to turn each line style into a double line. See §9.2 of [CSS3Text] for details. See also section 15.4.29.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:text-line-through-style">

<ref name="lineStyle"/>

</attribute>

</optional>

</define>

### Line-Through Width

Use the style:text-line-through-width property to specifies the width of a line-through line. This property is very similar to the [CSS3Text] text-line-through-width property, except that it has an additional value bold. bold specifies a line width that is calculated from the font sizes like an auto width, but is wider than an auto width. See §9.3 of [CSS3Text] for details. See also section 15.4.30.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:text-line-through-width">

<ref name="lineWidth"/>

</attribute>

</optional>

</define>

### Line-Through Color

Use the style:text-line-through-color property to specify the color that is used to line- through text. The value of this property is either font-color or a color. If the value is font-color, the current text color is used for underlining.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:text-line-through-color">

<choice>

<value>font-color</value>

<ref name="color"/>

</choice>

</attribute>

</optional>

</define>

### Line-Through Text

The style:text-line-through-text attribute is evaluated only if the value of style:text-line-through-style attribute is different than none. If the attribute value is not empty, the attribute value string is used for line-through instead of the line that has been specified, provided that the application supports line-through with text. If the application does not support line-through with text, the attribute is ignored, this means, style:text-line-through-style will be evaluated only. If the application supports line-through with single characters only, and the text-line-through-text has more than one character, the first character of the line-through-text should be used only. If the applications supports line-through with with certain characters only (like "x" or "/"), the application should use one of these characters if the text-line-through-text specifies characters that are not supported. In other words: line-through with text has a higher priority than line-through with lines, even if the line-through text that is specified has to be adapted to be usable by the application.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:text-line-through-text">

<ref name="string"/>

</attribute>

</optional>

</define>

### Line-Through Text Style

The style:text-line-through-text-style specifies a text style that is applied to the text-line-through characters. It is not applied to line-through lines. If the attribute appears in an automatic style, it may reference either an automatic text style or a common style. If the attribute appears in a common style, it may reference a common style only.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:text-line-through-text-style">

<ref name="styleNameRef"/>

</attribute>

</optional>

</define>

### Text Position

Use the style:text-position formatting property to specify whether text is positioned above or below the baseline and to specify the relative font height that is used for this text.

This attribute can have one or two values.

The first value must be present and specifies the vertical text position as a percentage that relates to the current font height or it takes one of the values sub or super. Negative percentages or the sub value place the text below the baseline. Positive percentages or the super value place the text above the baseline. If sub or super is specified, the application can choose an appropriate text position.

The second value is optional and specifies the font height as a percentage that relates to the current font-height. If this value is not specified, an appropriate font height is used. Although this value may change the font height that is displayed, it never changes the current font height that is used for additional calculations.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:text-position">

<list>

<choice>

<ref name="percent"/>

<value>super</value>

<value>sub</value>

</choice>

<optional>

<ref name="percent"/>

</optional>

</list>

</attribute>

</optional>

</define>

### Font Name

Use the style:font-name, style:font-name-asian and style:font-name-complex properties to assign a font to the text.

The values of these attributes form the name of a font that is declared by a <style:font-face> element within the <office:font-face-decls> element.

The style:font-name-asian attribute is evaluated for [UNICODE] characters that are CJK characters.

The style:font-name-complex attribute is evaluated for [UNICODE] characters that are complex text layout (CTL) characters.

The style:font-name attribute is evaluated for any other [UNICODE] character.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:font-name">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="style:font-name-asian">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="style:font-name-complex">

<ref name="string"/>

</attribute>

</optional>

</define>

### Font Family

Use the fo:font-family, style:font-family-asian and style:font-family-complex properties to specify the font family for the text.

These attributes may be used instead of the font name attributes to specify the properties of a font individually. However, it is advisable to use the style:font-name attributes instead. See section 15.4.13 for information about when Asian and complex variants of the attribute are evaluated. See also §7.8.2 of [XSL].

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="fo:font-family">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="style:font-family-asian">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="style:font-family-complex">

<ref name="string"/>

</attribute>

</optional>

</define>

### Font Family Generic

Use the style:font-family-generic, and style:font-family-generic-complex properties to specify a generic font family name.

These properties are ignored if there is no corresponding fo:font-family property attached to the same properties element.

Although it is recommended to use the font name attributes (see section 15.4.13), these properties may be used instead of them to specify the properties of a font.

See section 15.4.13 for information about when the Asian and complex variants of the attribute are evaluated.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:font-family-generic">

<ref name="fontFamilyGeneric"/>

</attribute>

</optional>

<optional>

<attribute name="style:font-family-generic-asian">

<ref name="fontFamilyGeneric"/>

</attribute>

</optional>

<optional>

<attribute name="style:font-family-generic-complex">

<ref name="fontFamilyGeneric"/>

</attribute>

</optional>

</define>

<define name="fontFamilyGeneric">

<choice>

<value>roman</value>

<value>swiss</value>

<value>modern</value>

<value>decorative</value>

<value>script</value>

<value>system</value>

</choice>

</define>

### Font Style

Use the style:font-style-name, style:font-style-name-asian and style:font-style-name-complex properties to specify a font style name.

These properties are ignored if there is no corresponding fo:font-family property attached to the same properties element.

Although it is recommended to use the font name attributes (see section 15.4.13), these properties may be used instead of them to specify the properties of a font.

See section 15.4.13 for information about when the Asian and complex variants of the attribute are evaluated.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:font-style-name">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="style:font-style-name-asian">

<ref name="string"/>

</attribute>

</optional>

<optional>

<attribute name="style:font-style-name-complex">

<ref name="string"/>

</attribute>

</optional>

</define>

### Font Pitch

Use the style:font-pitch, style:font-pitch and style:font-pitch-complex properties to specify whether a font has a fixed or variable width.

These properties are ignored if there is no corresponding fo:font-family property attached to the same properties element.

Although it is recommended to use the font name attributes (see section 15.4.13), these properties may be used instead of them to specify the properties of a font.

See section 15.4.13 for information about when the Asian and complex variants of the attribute are evaluated.

<define name="style-text-properties-attlist" combine="interleave">

<optional>

<attribute name="style:font-pitch">

<ref name="fontPitch"/>

</attribute>

</optional>

<optional>

<attribute name="style:font-pitch-asian">

<ref name="fontPitch"/>

</attribute>

</optional>

<optional>

<attribute name="style:font-pitch-complex">

<ref name="fontPitch"/>

</attribute>

</optional>

</define>

### The attribute text:animation-direction specifies the scroll direction of animated text.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="text:animation-direction">

<choice>

<value>left</value>

<value>right</value>

<value>up</value>

<value>down</value>

</choice>

</attribute>

</optional>

</define>

### Animation Start Inside

If this attribute text:animation-start-inside is true, the text starts its animation inside the shape. If its false, the text starts its animation just outside the shapes bounding rectangle.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="text:animation-start-inside">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Animation Stop Inside

If this attribute text:animation-stop-inside is true, the text stops when it is inside the the shape. If its false, the text stops its animation just outside the shapes bounding rectangle.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="text:animation-stop-inside">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Animation Repeat

The attribute text:animation-repeat specifies the number of times the animation is repeated. If the value of the attribute is 0, the animation is repeated indefinitely.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="text:animation-repeat">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Animation Delay

The attribute text:animation-delay specifies a delay before the animation is started. The value of this attribute must conform to the time period format described in §3.2.6 of [xmlschema-2].

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="text:animation-delay">

<ref name="duration"/>

</attribute>

</optional>

</define>

### Animation Steps

The attribute text:animation-steps specifies the distance by which text is moved within each scrolling step.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="text:animation-steps">

<ref name="length"/>

</attribute>

</optional>

</define>

## Text and Text Alignment Properties

Drawing objects that contain text and text boxes can have optional properties that specify how the text is aligned within the drawing object. These properties are available for drawing objects contained in all kinds of applications.

### Auto Grow Width and Height

The attributes draw:auto-grow-width and draw:auto-grow-height specify whether or not to automatically increase the width and height of the drawing object if text is added to the drawing object. These attributes usually are evaluated only for text boxes.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:auto-grow-width">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="draw:auto-grow-height">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Fit To Size

The attribute draw:fit-to-size specifies whether or not to stretch the text content of a drawing object to fill the entire object. If the value of the attribute is true, the text content is stretched.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:fit-to-size">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Fit To Contour

The attribute draw:fit-to-contour specifies whether or not to stretch the text content of a drawing object to fill the contour of the object. If the value of the attribute is true, the text content is stretched.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:fit-to-contour">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Text Area Vertical Align

The attribute draw:textarea-vertical-align specifies the vertical alignment of the text area inside a shape.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:textarea-vertical-align">

<choice>

<value>top</value>

<value>middle</value>

<value>bottom</value>

<value>justify</value>

</choice>

</attribute>

</optional>

</define>

### Text Area Horizontal Align

The attribute draw:textarea-horizontal-align specifies the horizontal alignment of the text area inside a shape.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:textarea-horizontal-align">

<choice>

<value>left</value>

<value>center</value>

<value>right</value>

<value>justify</value>

</choice>

</attribute>

</optional>

</define>

### Word Wrap

The fo:wrap-option attribute specifies if text is word wrapped in a shape.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="fo:wrap-option">

<choice>

<value>no-wrap</value>

<value>wrap</value>

</choice>

</attribute>

</optional>

</define>

### List Styles

The <text:list-style> element as described in section 14.10 specifies a list style that is applied to the paragraphs contained in a text box. Although the list style has a name, it is not displayed in the user interface, even if the graphic style that contains it is a common style.

Including a list style element into a graphic style has the same semantics as adding a style:list-style-name attribute (see section 14.1) to the style that references a list style that is declared outside a graphic style. The inclusion of a list style element is required in cases where a common graphic style should be associated with an automatic list style.

List styles contained in a graphic style can be referenced by other graphic styles using the style:list-style-name attribute.

<define name="style-graphic-properties-elements" combine="interleave">

<optional>

<ref name="text-list-style"/>

</optional>

</define>

## Color Properties

Drawing objects that display a bitmap graphic can have optional properties that adjust the colors of the bitmap. These properties are available for drawing objects contained in all kinds of applications.

### Color Mode

The attribute draw:color-mode affects the output of colors from a source bitmap or raster graphic.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:color-mode">

<choice>

<value>greyscale</value>

<value>mono</value>

<value>watermark</value>

<value>standard</value>

</choice>

</attribute>

</optional>

</define>

### Color Inversion

The attribute draw:color-inversion specifies whether or not the colors in the graphic shape should be inverted.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:color-inversion">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Adjust Luminance

The attribute draw:luminance specifies a signed percentage value that affects the output luminance of a bitmap or raster graphic.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:luminance">

<ref name="percent"/>

</attribute>

</optional>

</define>

### Adjust Contrast

The attribute draw:contrast specifies a signed percentage value that affects the output contrast of a bitmap or raster graphic.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:contrast">

<ref name="percent"/>

</attribute>

</optional>

</define>

### Adjust Gamma

The attribute draw:gamma specifies a value that affects the output gamma of a bitmap or raster graphic.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:gamma">

<ref name="percent"/>

</attribute>

</optional>

</define>

### Adjust Red

The attribute draw:red specifies a signed percentage value that affects the output of the red color space of a bitmap or raster graphic.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:red">

<ref name="percent"/>

</attribute>

</optional>

</define>

### Adjust Green

The attribute draw:green specifies a signed percentage value that affects the output of the green color space of a bitmap or raster graphic.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:green">

<ref name="percent"/>

</attribute>

</optional>

</define>

### Adjust Blue

The attribute draw:blue specifies a signed percentage value that affects the output of the blue color space of a bitmap or raster graphic.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:blue">

<ref name="percent"/>

</attribute>

</optional>

</define>

### Adjust Opacity

The attribute draw:image-opacity adjusts the opacity of an image. The value can be between 0% and 100%. See also section 15.14.13.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:image-opacity">

<ref name="percent"/>

</attribute>

</optional>

</define>

## Shadow Properties

Most drawing objects can have a shadow. The following attributes specify how the shadow is rendered. These properties are available for drawing objects contained in all kinds of applications.

### Shadow

The attribute draw:shadow enables or disables the visibility of a shadow.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:shadow">

<choice>

<value>visible</value>

<value>hidden</value>

</choice>

</attribute>

</optional>

</define>

### Offset

The attributes draw:shadow-offset-x and draw:shadow-offset-y are used to render a shadow. A copy of the shape is rendered in the single shadow color (specified by draw:shadow-color) behind the shape. The offset attributes specify the offset between the top left edge of the shape and the top left edge of the border

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:shadow-offset-x">

<ref name="length"/>

</attribute>

</optional>

<optional>

<attribute name="draw:shadow-offset-y">

<ref name="length"/>

</attribute>

</optional>

</define>

### Color

The attribute draw:shadow-color specifies the color in which the shadow is rendered.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:shadow-color">

<ref name="color"/>

</attribute>

</optional>

</define>

### Opacity

The attribute draw:shadow-opacity specifies the opacity in which the shadow is rendered. The value of this attribute is a percentage value.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:shadow-opacity">

<ref name="percent"/>

</attribute>

</optional>

</define>

## Connector Properties

The properties described in this section are specific to connector drawing objects. These properties are available for connector drawing objects contained in all kinds of applications.

### Start Line Spacing

For standard connectors, the attributes draw:start-line-spacing-horizontal and draw:start-line-spacing-vertical increment the length of the escape line from the start shape for standard connectors. For lines connectors, these attributes specify the absolute length of the escape line from the start shape. For other connector types, they are ignored.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:start-line-spacing-horizontal">

<ref name="distance"/>

</attribute>

</optional>

<optional>

<attribute name="draw:start-line-spacing-vertical">

<ref name="distance"/>

</attribute>

</optional>

</define>

### End Line Spacing

For standard connectors, the attributes draw:end-line-spacing-horizontal and draw:end-line-spacing-vertical increment the length of the escape line from the end shape. For lines connectors, they specify the absolute length of the escape line from the end shape. For other connector types, they are ignored.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:end-line-spacing-horizontal">

<ref name="distance"/>

</attribute>

</optional>

<optional>

<attribute name="draw:end-line-spacing-vertical">

<ref name="distance"/>

</attribute>

</optional>

</define>

## Measure Properties

The properties described in this section are specific to measure drawing objects. These properties are available for measure drawing objects contained in all kinds of applications.

### Line Distance

The attribute draw:line-distance specifies the distance from the reference points to the measure line.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:line-distance">

<ref name="distance"/>

</attribute>

</optional>

</define>

### Unit

The attribute draw:unit specifies the unit used in the textual presentation of a measure shape.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:unit">

<choice>

<value>automatic</value>

<value>mm</value>

<value>cm</value>

<value>m</value>

<value>km</value>

<value>pt</value>

<value>pc</value>

<value>inch</value>

<value>ft</value>

<value>mi</value>

</choice>

</attribute>

</optional>

</define>

### Show Unit

The attribute draw:show-unit toggles the display of the unit in the textual presentation of a measure shape.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:show-unit">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Decimal Places

The attribute draw:decimal-places specifies the number of decimal places that are used for the measure text.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:decimal-places">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

## Caption Properties

The following attributes can be used in the styles for caption shapes. These properties are available for caption objects contained in all kinds of applications.

* Type
* Angle type
* Angle
* Gap
* Escape direction
* Escape
* Line length
* Fit line length

### Type

The attribute draw:caption-type specifies the geometry of the line of a caption.

* straight-line: a straight perpendicular line is drawn to the caption point.
* angled-line: a straight line is drawn to the caption point.
* angled-connector-line: a straight perpendicular line, followed by a straight line is drawn to the caption point.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:caption-type">

<choice>

<value>straight-line</value>

<value>angled-line</value>

<value>angled-connector-line</value>

</choice>

</attribute>

</optional>

</define>

### Angle Type

The attribute draw:caption-angle-type specifies if the escape angle of the line of a caption is fixed or free. If this is set to free the application can choose the best possible angle.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:caption-angle-type">

<choice>

<value>fixed</value>

<value>free</value>

</choice>

</attribute>

</optional>

</define>

### Angle

The attribute draw:caption-angle specifies the escape angle of the line of a caption. It is evaluated only if draw:caption-angle-type has the value fixed.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:caption-angle">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Gap

The attribute draw:caption-gap specifies the distance between the text area of the caption and the start of the line.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:caption-gap">

<ref name="distance"/>

</attribute>

</optional>

</define>

### Escape Direction

The attribute draw:caption-escape-direction specifies the escape direction for the line of a caption. If this is set to auto the application can choose the best direction.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:caption-escape-direction">

<choice>

<value>horizontal</value>

<value>vertical</value>

<value>auto</value>

</choice>

</attribute>

</optional>

</define>

### Escape

The attribute draw:caption-escape specifies the escape point of the caption line measured from the top left corner of the text area. The value can be an absolute length or a percentage.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:caption-escape">

<choice>

<ref name="length"/>

<ref name="percent"/>

</choice>

</attribute>

</optional>

</define>

### Line Length

The attribute draw:caption-line-length specifies the length of the first caption line (i.e., the one that starts at the caption's text area). The attribute is only evaluated if draw:caption-fit-line-length has the value false.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:caption-line-length">

<ref name="length"/>

</attribute>

</optional>

</define>

### Fit Line Length

If the attribute draw:caption-fit-line-length is true, the application determines the best possible length for the caption line.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:caption-fit-line-length">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## 3D Geometry Properties

The 3D geometry properties described in this section are applicable to 3D drawing objects. These properties are available for 3D drawing objects contained in all kinds of applications.

### Horizontal Segments

If the geometry of a 3D object is generated during run-time, the dr3d:horizontal-segments attribute is used to specify the number of horizontal segments that are used to generate the geometry. Typical applications support values between 2 and 256.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:horizontal-segments">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Vertical Segments

If the geometry of a 3D object is generated during run-time, the attribute is used to specify the number of vertical segments that are used to generate the geometry. Typical applications support values between 2 and 256.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:vertical-segments">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Edge Rounding

If the geometry of a 3D object is generated during run-time, the dr3d:edge-rounding attribute is used to specify the size of an area at the edges of the geometry that is used for rounding the edges.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:edge-rounding">

<ref name="percent"/>

</attribute>

</optional>

</define>

### Edge Rounding Mode

The attribute dr3d:edge-rounding-mode specifies how to generate rounded edges.

The value of this attribute can be correct or attractive. If the value is correct, the mathematically correct method is used. If the value is attractive, a method which preserves the visual appearance of the text is used.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:edge-rounding-mode">

<choice>

<value>correct</value>

<value>attractive</value>

</choice>

</attribute>

</optional>

</define>

### Back Scale

The attribute dr3d:back-scale specifies the proportion of the background geometry for lathe and extrude objects.

For example, with a back scale of 50%, the background plane of an extrude object is half the size of the foreground plane.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:back-scale">

<ref name="percent"/>

</attribute>

</optional>

</define>

### Depth

The dr3d:depth attribute specifies the extrusion depth for extrude objects.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:depth">

<ref name="length"/>

</attribute>

</optional>

</define>

### Backface Culling

The dr3d:backface-culling attribute enables or disables backface culling.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:backface-culling">

<choice>

<value>enabled</value>

<value>disabled</value>

</choice>

</attribute>

</optional>

</define>

### End Angle

The attribute dr3d:end-angle specifies the rotation angle for 3D lathe objects. If it is the default (360°), the lathe object is closed and completely rotated. With smaller values it is possible to define opened lathe objects (segments). The then visible sides are closed and take into account the dr3d:back-scale and dr3d:edge-rounding attributes. With bigger values it is possible to create lathe objects with more than one rotation. This will only have a visible effect when e.g., dr3d:back-scale is used.

For example, with a end angle of 270°, the lathe object will be opened by 90°.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:end-angle">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Close Front

The dr3d:close-front property specifies whether a front plane shall be generated. E.g., if an ellipse is extruded, and this attribute is set, the ellipse will have an open front. The attribute can be used with extrudes and lathe objects.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:close-front">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Close Back

The dr3d:close-back property describes if a back plane shall be generated. E.g., if an ellipse is extruded, and this attribute is set, the ellipse will have an open back. The attribute can be used with extrudes and lathe objects.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:close-back">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## 3D Lighting Properties

The 3D lightning properties described in this section are applicable to 3D drawing objects. These properties are available for 3D drawing objects contained in all kinds of applications.

### Mode

The attribute dr3d:lighting-mode determines the lighting algorithm used to render the corresponding 3D object.

The value of this attribute can be standard or double-sided. If the value is double-sided, the reverse sides of the objects are also lighted.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:lighting-mode">

<choice>

<value>standard</value>

<value>double-sided</value>

</choice>

</attribute>

</optional>

</define>

### Normals Kind

The attribute dr3d:normals-kind specifies how the normal settings for the generated lighting.

* object: does not produce standard normals, but leaves the object-specific ones untouched.
* flat: forces one normal per flat part
* sphere: forces normals to behave as the object would be a sphere.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:normals-kind">

<choice>

<value>object</value>

<value>flat</value>

<value>sphere</value>

</choice>

</attribute>

</optional>

</define>

### Normals Direction

The dr3d:normals-direction attribute is used to inverse the generated normal lighting settings.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:normals-direction">

<choice>

<value>normal</value>

<value>inverse</value>

</choice>

</attribute>

</optional>

</define>

## 3D Texture Properties

The 3D texture properties described in this section are applicable to 3D drawing objects. These properties are available for 3D drawing objects contained in all kinds of applications.

### Generation Mode

The attributes dr3d:texture-generation-mode-x and dr3d:texture-generation-mode-y specify how the texture coordinates are generated.

* object: This value specifies that the standard object projection method is used
* parallel: This value specifies a flat parallel projection in the specified degree of freedom (X or Y).
* sphere: This value forces projection to wrapping in X and/or Y direction

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:texture-generation-mode-x">

<choice>

<value>object</value>

<value>parallel</value>

<value>sphere</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="dr3d:texture-generation-mode-y">

<choice>

<value>object</value>

<value>parallel</value>

<value>sphere</value>

</choice>

</attribute>

</optional>

</define>

### Kind

The attribute dr3d:texture-kind is used to select whether the texture changes the luminance, intensity, or color of the shape.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:texture-kind">

<choice>

<value>luminance</value>

<value>intensity</value>

<value>color</value>

</choice>

</attribute>

</optional>

</define>

### Filter

The attribute dr3d:texture-filter is used to enable or disable texture filtering.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:texture-filter">

<choice>

<value>enabled</value>

<value>disabled</value>

</choice>

</attribute>

</optional>

</define>

### Mode

The attribute dr3d:normals-direction is used to specify how the texture is modulated.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:texture-mode">

<choice>

<value>replace</value>

<value>modulate</value>

<value>blend</value>

</choice>

</attribute>

</optional>

</define>

## 3D Material Properties

The 3D texture properties described in this section are applicable to 3D drawing objects. These properties are available for 3D drawing objects contained in all kinds of applications.

### Colors

The attributes dr3d:ambient-color, dr3d:emissive-color, dr3d:specular-color and dr3d:diffuse-color specify the four colors that define a material.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:ambient-color">

<ref name="color"/>

</attribute>

</optional>

<optional>

<attribute name="dr3d:emissive-color">

<ref name="color"/>

</attribute>

</optional>

<optional>

<attribute name="dr3d:specular-color">

<ref name="color"/>

</attribute>

</optional>

<optional>

<attribute name="dr3d:diffuse-color">

<ref name="color"/>

</attribute>

</optional>

</define>

### Shininess

The attribute dr3d:shininess specifies the shine of the used material.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:shininess">

<ref name="percent"/>

</attribute>

</optional>

</define>

## 3D Shadow Properties

The 3D shadow properties described in this section are applicable to 3D drawing objects. These properties are available for 3D drawing objects contained in all kinds of applications.

### Shadow

The attribute dr3d:shadow enables or disables a three-dimensional shadow for a three-dimensional object.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="dr3d:shadow">

<choice>

<value>visible</value>

<value>hidden</value>

</choice>

</attribute>

</optional>

</define>

## Frame Formatting Properties

The properties described in this section apply to draw frames (see section 9.3). They can be used within graphic styles (see section 14.13.1) and they are contained in a <style:graphic-properties> element.

### Frame Widths

There are three types of frame widths; fixed widths, minimum widths and relative widths. Fixed widths are specified using the svg:width attribute, minimum widths are specified using the fo:min-width attribute and relative widths are specified using the style:rel-width attribute. The meaning of these attributes is the same as described in section 9.3, except that the attributes specify the default width for new created frames only. The style:rel-width attribute will be evaluated only for graphic styles that are applied to text boxes.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-draw-rel-size-attlist"/>

<optional>

<attribute name="fo:min-width">

<choice>

<ref name="length"/>

<ref name="percent"/>

</choice>

</attribute>

</optional>

</define>

### Frame Heights

There are three types of frame heights; fixed heights, minimum heights and relative heights. Fixed heights are specified using the svg:height attribute, minimum heights are specified using the fo:min-height attribute and relative heights are specified using the style:rel-height attribute. The meaning of these attributes is the same as described in section 9.3, except that the attributes specify the default height for new created frames only. The style:rel-height attribute will be evaluated only for graphic styles that are applied to text boxes. See also section 15.27.1.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="fo:min-height">

<choice>

<ref name="length"/>

<ref name="percent"/>

</choice>

</attribute>

</optional>

</define>

### Maximum Width and Height

Text boxes can increase in size automatically when content is added. The fo:max-width and fo:max-height attributes specify a maximum width and height for the frame. When the maximum values are reached, the frame stops increasing in size. The attributes' value can be either a length or a percentage. If the anchor for the text box is in a table cell, the percentage value relates to the surrounding table box. If the anchor for the text box is in a text box, the percentage value relates to the surrounding text box. In other cases, the percentage values relate to the height of the page or window.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="fo:max-height">

<choice>

<ref name="length"/>

<ref name="percent"/>

</choice>

</attribute>

</optional>

<optional>

<attribute name="fo:max-width">

<choice>

<ref name="length"/>

<ref name="percent"/>

</choice>

</attribute>

</optional>

</define>

### Left and Right Margins

The fo:margin-left and fo:margin-right properties determine the left and right margins to set around a frame. See sections 15.5.17 for detailed information on these attributes. Percentage values are not supported.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-horizontal-margin-attlist"/>

</define>

### Top and Bottom Margins

The fo:margin-top and fo:margin-bottom properties determine the top and bottom margins to set around a frame. See sections 15.5.20 for detailed information on these attributes. Percentage values are not supported.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-vertical-margin-attlist"/>

</define>

### Margins

The fo:margin property specifies the the margin for all four edges of a frame. See section 15.5.21 for a full explanation of this property.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-margin-attlist"/>

</define>

### Print Content

The style:print-content property specifies whether or not the content of a frame is printed.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:print-content">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Protect

The style:protect property specifies whether the content, size, or position of a frame is protected. The value of this property can be either none or a space separated list that consists of any of the values content, position, or size.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:protect">

<choice>

<value>none</value>

<list>

<oneOrMore>

<choice>

<value>content</value>

<value>position</value>

<value>size</value>

</choice>

</oneOrMore>

</list>

</choice>

</attribute>

</optional>

</define>

### Horizontal Position

Within text documents, the style:horizontal-pos property specifies the horizontal alignment of the frame in relation to the specific area.

The value of this property can be one of the following: from-left, left, center, right, from-inside, inside, or outside. The area that the position relates to is specified by the style:horizontal-rel property. The values from-inside, inside and outside correspond to the values from-left, left, and right on pages that have an odd page number and to the opposite values on pages that have an even page number.

If the property value is from-left or from-inside, the svg:x attribute associated with the frame element specifies the horizontal position of the frame. Otherwise the svg:x attribute is ignored for text documents.

It is also possible to use an svg:x attribute within a graphic style. If this is the case, then the attribute specifies a default position for new frames that are created using this style.

Some values may be used in connection with certain frame anchor and relation types only.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:horizontal-pos">

<choice>

<value>left</value>

<value>center</value>

<value>right</value>

<value>from-left</value>

<value>inside</value>

<value>outside</value>

<value>from-inside</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="svg:x">

<ref name="coordinate"/>

</attribute>

</optional>

</define>

The following tables display the possible values of the attributes style:horizontal-pos and style:horizontal-rel. The possible values of these alignment attributes are listed in the first column on the left, and an alignment attribute value/anchor type value match is indicated by an X.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Value of style:horizontal-pos | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Value of text:anchor-type | | | | | | page | frame | paragraph | char | as-char | | | | | |
| any | X | X | X | X |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Value of style:horizontal-rel | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Value of text:anchor-type | | | | | | page | frame | paragraph | char | as-char | | | | | |
| page | X |  | X | X |  |
| page-content | X |  | X | X |  |
| page-start-margin | X |  | X | X |  |
| page-end-margin | X |  | X | X |  |
| frame |  | X |  |  |  |
| frame-content |  | X |  |  |  |
| frame-start-margin |  | X |  |  |  |
| frame-end-margin |  | X |  |  |  |
| paragraph |  |  | X | X |  |
| paragraph-content |  |  | X | X |  |
| paragraph-start-margin |  |  | X | X |  |
| paragraph-end-margin |  |  | X | X |  |
| char |  |  |  | X |  |

### Horizontal Relation

The style:horizontal-rel property specifies the area to which the horizontal position of a frame relates. See section 15.27.9 for information on the style:horizontal-pos property.

The value of this property can be one of the following: page, page-content, page-start-margin, page-end-margin, frame, frame-content, frame-start-margin, frame-end-margin, paragraph, paragraph-content, paragraph-start-margin, paragraph-end-margin, or char.

Some values can be used with only certain frame anchor types.

The value start-margin determines the left margin, except when the horizontal position is from-inside, inside or outside and the anchor for the frame is on a page with an even page number, in which case it determines the right margin. The value end-margin determines the opposite margin to the start-margin values.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:horizontal-rel">

<choice>

<value>page</value>

<value>page-content</value>

<value>page-start-margin</value>

<value>page-end-margin</value>

<value>frame</value>

<value>frame-content</value>

<value>frame-start-margin</value>

<value>frame-end-margin</value>

<value>paragraph</value>

<value>paragraph-content</value>

<value>paragraph-start-margin</value>

<value>paragraph-end-margin</value>

<value>char</value>

</choice>

</attribute>

</optional>

</define>

### Vertical Position

The style:vertical-pos property specifies the vertical alignment of the frame in relation to a specific area.

The value of this property can be one of the following: from-top, top, middle, below or bottom. The area that the position relates to is specified by the style:vertical-rel property. top, middle and bottom specify the the given corners of the frame and the reference area get aligned. below specifies that the top corner of the frame is positioned below the reference area.

If the value of this property is from-top, the svg:y attribute associated with the frame element specifies the vertical position of the frame. Otherwise, the svg:y attribute is ignored for text documents.

It is also possible to use an svg:y attribute within a graphic style. If this is the case, the attribute specifies a default position for new frames that are created using this style.

Some values may be used in connection with certain frame anchor and relation types only.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-vertical-pos-attlist"/>

</define>

<define name="common-vertical-pos-attlist">

<optional>

<attribute name="style:vertical-pos">

<choice>

<value>top</value>

<value>middle</value>

<value>bottom</value>

<value>from-top</value>

<value>below</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="svg:y">

<ref name="coordinate"/>

</attribute>

</optional>

</define>

The following tables display the possible values of the attributes style:vertical-pos and style:vertical-rel. The possible values of these alignment attributes are listed in the first column on the left, and an alignment attribute value/anchor type value match is indicated by an X.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Value of style:vertical-pos | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Value of text:anchor-type | | | | | | page | frame | paragraph | char | as-char | | | | | |
| any | X | X | X | X | X |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Value of style:vertical-rel | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Value of text:anchor-type | | | | | | page | frame | paragraph | char | as-char | | | | | |
| page | X |  |  |  |  |
| page-content | X |  |  |  |  |
| frame |  | X |  |  |  |
| frame-content |  | X |  |  |  |
| paragraph |  |  | X | X |  |
| paragraph-content |  |  | X | X |  |
| char |  |  |  | X | X |
| line |  |  |  |  | X |
| baseline |  |  |  |  | X |
| text |  |  |  |  | X |

### Vertical Relation

The style:vertical-rel property specifies the area to which the vertical position of a frame relates. See section 15.27.11 for information on the style:vertical-pos property.

The value of this property can be one of the following: page, page-content, frame, frame-content, paragraph, paragraph-content, line, baseline, text or char.

Some values can be used with only certain frame anchor types.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-vertical-rel-attlist"/>

</define>

<define name="common-vertical-rel-attlist">

<optional>

<attribute name="style:vertical-rel">

<choice>

<value>page</value>

<value>page-content</value>

<value>frame</value>

<value>frame-content</value>

<value>paragraph</value>

<value>paragraph-content</value>

<value>char</value>

<value>line</value>

<value>baseline</value>

<value>text</value>

</choice>

</attribute>

</optional>

</define>

### Frame Anchor

The text:anchor-type and text:anchor-page-number specify the default anchor for new frames and drawing objects. See section 9.2.16 for details.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-text-anchor-attlist"/>

</define>

### Border

The border attributes fo:border, fo:border-top, fo:border-bottom, fo:border-left and fo:border-right specify the border properties of the frame. See section 15.5.25 for detailed information on these attributes.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-border-attlist"/>

</define>

### Border Line Width

If a frame has borders, the border line width attributes style:border-line-width, style:border-line-width-top, style:border-line-width-bottom, style:border-line-width-left and style:border-line-width-right specify the properties of the border lines of the frame. See section 15.5.26 for detailed information on these attributes.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-border-line-width-attlist"/>

</define>

### Padding

The padding attributes fo:padding, fo:padding-top, fo:padding-bottom, fo:padding-left and fo:padding-right specify the padding properties of the frame. See section 15.5.27 for detailed information on these attributes.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-padding-attlist"/>

</define>

### Shadow

The shadow attribute style:shadow specifies the shadow of the frame. See section 15.5.28 for detailed information on this attribute.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-shadow-attlist"/>

</define>

### Background

The background attribute fo:background-color and the background element <style:background-image> specify the background properties of the frame. See sections 15.5.23 and 15.5.24 for detailed information on this attribute and element.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-background-color-attlist"/>

</define>

<define name="style-graphic-properties-elements" combine="interleave">

<ref name="style-background-image"/>

</define>

### Columns

The <style:columns> element specifies if a text box contains columns. See section 15.7.3 for detailed information on this element.

<define name="style-graphic-properties-elements" combine="interleave">

<ref name="style-columns"/>

</define>

### Editable

Within text documents, a text box can be editable even if the document in which it is contained is a read-only document. The style:editable property specifies if a text box can be edited.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:editable">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Wrapping

Within text documents, the style:wrap property specifies how text around a frame or graphic object is treated. For example, text can run around the left side of the frame, around the right side of the frame, or through the frame. The possible values are:

* none: no text wraps around the drawing shape.
* left: Text may wrap around the left side of the drawing shape.
* right: Text may wrap around the left side of the drawing shape.
* parallel: Text may wrap around both sides of the drawing shape.
* dynamic: Text may wrap around both sides of the drawing shape, provided that there is sufficient space left.
* biggest: Text may wraps around the object border where the difference to the left or right page or column border is largest.
* run-through: Text runs through the drawing object.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:wrap">

<choice>

<value>none</value>

<value>left</value>

<value>right</value>

<value>parallel</value>

<value>dynamic</value>

<value>run-through</value>

<value>biggest</value>

</choice>

</attribute>

</optional>

</define>

### Dynamic Wrap Threshold

The style:wrap-dynamic-threshold attribute is evaluated only if the style:wrap attribute has a value of dynamic. It specifies the minimum distance between the page or column border and the object for which wrapping will be enabled.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:wrap-dynamic-threshold">

<ref name="nonNegativeLength"/>

</attribute>

</optional>

</define>

### Paragraph-only Wrapping

If the anchor position of a frame or drawing shape is a paragraph or a character, and the wrap mode specified by the style:wrap property is left, right, parallel, or dynamic, the number of paragraphs that wrap around the frame can be specified using a style:number-wrapped-paragraphs attribute.

This property is only recognized by frames or styles that have a style:wrap property attached with a value of left, right, parallel, or dynamic.

If the value is no-limit, there is no limit on the number of paragraphs that are allowed to wrap around a frame.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:number-wrapped-paragraphs">

<choice>

<value>no-limit</value>

<ref name="positiveInteger"/>

</choice>

</attribute>

</optional>

</define>

### Contour Wrapping

Within text documents, the style:wrap-contour attribute specifies for some frame types that the text should wrap around the shape of the object in the frame rather than around the frame itself . This is called contour wrapping.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:wrap-contour">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Contour Wrapping Mode

The style:wrap-contour-mode attribute is used to further specify how the text should wrap around the contour.

This attribute is recognized only by frames/drawing shapes or styles that already have the style:wrap and style:wrap-contour attributes attached.

The value of the attribute can be outside or full. If the value of the attribute is outside, the text wraps around the general area to the left and right of the shape. If the value of the attribute is full, the text wraps around the shape and fills any possible spaces and indentations in the shape.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:wrap-contour-mode">

<choice>

<value>full</value>

<value>outside</value>

</choice>

</attribute>

</optional>

</define>

### Run Through

If the value of the style:wrap attribute is run-through, it can be further specified whether the content of the frame should be displayed in the background or in the foreground. The style:run-through attribute is usually used for transparent objects.

The value of this attribute can be foreground or background. If the value is foreground, the frame content is displayed in front of the text. If the value is background, the frame content is displayed behind the text.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:run-through">

<choice>

<value>foreground</value>

<value>background</value>

</choice>

</attribute>

</optional>

</define>

### Flow with Text

The style:flow-with-text attribute specifies the behavior of drawing shapes that are positioned at a certain distance below an anchor and do not fit on the page where the anchor is. If the value of the property is true, such drawing objects follow the text flow, that is, they a displayed on the next page. If the attribute value is false, such drawing objects are displayed outside the page's text area.

Example: A graphic is to be positioned 10cm below its anchor. It is followed by only 8cm of text before the next page break. With style:flow-with-text='false' the graphics would then be positioned 2cm below the text area (somewhere in the footer); with style:flow-with-text='true' it would positioned 2cm into the text flow of the following page.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:flow-with-text">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Overflow behavior

For text boxes contained within text document, the style:overflow-behavior property specifies the behavior of text boxes where the containing text does not fit into the text box. If the attribute's value is clip, the text that does not fit into the text box is not displayed. If the attribute value is auto-create-new-frame, a new frame will be created on the next page, with the same position and dimensions of the original frame.

If the style:overflow-behavior property's value is auto-create-new-frame and the text box has a minimum width or height specified, then the text box will grow until the page bounds are reached before a new frame is created.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:overflow-behavior">

<choice>

<value>clip</value>

<value>auto-create-new-frame</value>

</choice>

</attribute>

</optional>

</define>

### Mirroring

The *style:mirror* property specifies whether or not an image is mirrored before it is displayed. The mirroring can be vertical or horizontal. Horizontal mirroring can be restricted to images that are only located on either odd or even pages.

The value of this attribute can be none, vertical, horizontal, horizontal-on-odd, or horizontal-on-even. The value vertical and the various horizontal values can be specified together, separating them by a white space.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="style:mirror">

<choice>

<value>none</value>

<value>vertical</value>

<ref name="horizontal-mirror"/>

<list>

<value>vertical</value>

<ref name="horizontal-mirror"/>

</list>

<list>

<ref name="horizontal-mirror"/>

<value>vertical</value>

</list>

</choice>

</attribute>

</optional>

</define>

<define name="horizontal-mirror">

<choice>

<value>horizontal</value>

<value>horizontal-on-odd</value>

<value>horizontal-on-even</value>

</choice>

</define>

### Clipping

The *fo:clip* property specifies whether to display:

* A rectangular section of an image, or
* the entire image.

See §7.20.1 of [XSL] for details.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="fo:clip">

<!-- The attribute value must match the one XSL's clip -->

<ref name="string"/>

</attribute>

</optional>

</define>

### Wrap Influence on Position

This attribute details how the wrapping mode (see the style:wrap attribute) influences the positioning of a frame. It is intended as a hint to the layout algorithm to help decide on the placement of frames in certain cases where several correct placements could be used. All three options describe different, correct interpretations of the layout constraints already in the format. The new hint would allow to disambiguate between these situations.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:wrap-influence-on-position"

a:defaultValue="iterative">

<choice>

<value>iterative</value>

<value>once-concurrent</value>

<value>once-successive</value>

</choice>

</attribute>

</optional>

</define>

The situation in which this attribute makes a difference is when the anchor, position and wrapping mode of a frame are such that they influence each other. For example, consider a paragraph of text with two images positioned somewhat above the anchor. Without wrapping, the images overly the text and can simply be placed at the given offset from the anchor.

If wrap-around is enabled, the text hidden behind the images now needs to flow around the images, making the first paragraph use more space than previously. This moves the anchor position further down. If one does the placement only once and concurrently for all objects, this is the final result. This corresponds to the object once-concurrently.

If one proceeds as above, but does the process one image at a time, one arrives at the positions given to the right. This corresponds to the option once-successive.

If one places the images iteratively, until a position is found which corresponds to the given offset from the anchor, one can often achieve a placement that fully satisfy all the given layout properties (at a certain price in implementation cost). This corresponds to the option iterative.

### Writing Mode

The style:writing-mode attribute specifies the writing mode for a text-box. See section 15.5.36 for details.

<define name="style-graphic-properties-attlist" combine="interleave">

<ref name="common-writing-mode-attlist"/>

</define>

## Floating Frame Formatting Properties

The attributes described in this section can be assigned to a graphic style that is assigned to floating frames.

### Display Scrollbar

The draw:display-scrollbar attribute specifies whether or not vertical and horizontal scrollbars are displayed. This attribute can be assigned to automatic styles only.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:frame-display-scrollbar">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Display Border

The draw:display-border attribute specifies whether or not a border is displayed on the floating frame. This attribute can be assigned to automatic styles only.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:frame-display-border">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Margins

The draw:margin-horizontal and draw:margin-vertical attributes specify the horizontal and vertical margins between the border and the content of the floating frame. If these attributes are not specified, the default margins are used. These attributes can be assigned to automatic styles only. The value of these attributes must be a length in pixels.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:frame-margin-horizontal">

<ref name="nonNegativePixelLength"/>

</attribute>

</optional>

<optional>

<attribute name="draw:frame-margin-vertical">

<ref name="nonNegativePixelLength"/>

</attribute>

</optional>

</define>

<define name="nonNegativePixelLength">

<data type="string">

<param name="pattern">([0-9]+(\.[0-9]\*)?|\.[0-9]+)(px)</param>

</data>

</define>

### Object Formatting Properties

The attributes described in this section can be assigned to a graphic style that is assigned to objects.

### Visible Area

The visible area of an object is the rectangular area of the object that is currently visible. The attributes draw:visible-area-left, draw:visible-area-top, draw:visible-area-width and draw:visible-area-height specify a default visible area that the object has the option to use.

When the entire object is visible, the values of the draw:visible-area-left and draw:visible-area-top attributes are 0 and the draw:visible-area-width and draw:visible-area-height attributes specify the size of the object. These attributes can be assigned to automatic styles only.

Not all objects support these attributes. Some objects, may store and load their own visible area.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:visible-area-left">

<ref name="nonNegativeLength"/>

</attribute>

</optional>

<optional>

<attribute name="draw:visible-area-top">

<ref name="nonNegativeLength"/>

</attribute>

</optional>

<optional>

<attribute name="draw:visible-area-width">

<ref name="positiveLength"/>

</attribute>

</optional>

<optional>

<attribute name="draw:visible-area-height">

<ref name="positiveLength"/>

</attribute>

</optional>

</define>

### Draw Aspect

For embedded OLE objects, the draw:ole-draw-aspect attribute specifies the draw aspect that is used to display embedded objects (see [OLE]). The draw aspect controls whether the object is displayed as a normal sub document, or whether the object is for instance displayed as an icon only. Within the [OLE] API, the draw aspect is an unsigned integer value that the host application passes to the object when it requests its presentation.

The draw:ole-draw-aspect attribute takes a non negative integer value and has only a meaning for objects that are embedded using the [OLE] API. In this case, its value specifies a default value for method calls that require a draw aspect. The interpretation of this integer value is left to the OLE object's discretion and not part of this specification.

<define name="style-graphic-properties-attlist" combine="interleave">

<optional>

<attribute name="draw:ole-draw-aspect">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

## Chart Formatting Properties

The properties described in this section can be applied to all charts. They can be used within chart styles (see section 14.16) and are contained in a <style:chart-properties> element.

<define name="style-chart-properties">

<element name="style:chart-properties">

<ref name="style-chart-properties-content"/>

</element>

</define>

<define name="style-chart-properties-content">

<ref name="style-properties-content"/>

</define>

<define name="style-chart-properties-content-strict">

<ref name="style-chart-properties-attlist"/>

<ref name="style-chart-properties-elements"/>

</define>

<define name="style-chart-properties-elements">

<empty/>

</define>

### Scale Text

The chart:scale-text property is used to specify that all text objects in the chart should be scaled whenever the size of the chart changes. To enable scaling, set the value of this property to true.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:scale-text" a:defaultValue="true">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## Chart Subtype Properties

The properties described in this section can be used to customize the basic chart type set in the <chart:chart> element. They can be used within chart styles (see section 14.16) and are contained in a <style:chart-properties> element.

### Three-dimensional Charts

The chart:three-dimensional property specifies whether chart is displayed as a 3D scene.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:three-dimensional">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Chart Depth

The chart:deep property is only relevant with the chart:three-dimensional property. It specifies that the data series are displayed back-to-back rather than side by side.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:deep">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Chart Symbol

For some chart types, the data points can be denoted by symbols. The chart:symbol-type attribute determines whether a symbol is used, and whether it is a pre-defined symbol type, an image, or whether the application is free to automatically choose a type out of the set of pre-defined symbol types, e.g., choose one symbol per series in round-robin fashion.

<define name="style-chart-properties-attlist" combine="interleave">

<choice>

<attribute name="chart:symbol-type">

<value>none</value>

</attribute>

<attribute name="chart:symbol-type">

<value>automatic</value>

</attribute>

<group>

<attribute name="chart:symbol-type">

<value>named-symbol</value>

</attribute>

<attribute name="chart:symbol-name">

<choice>

<value>square</value>

<value>diamond</value>

<value>arrow-down</value>

<value>arrow-up</value>

<value>arrow-right</value>

<value>arrow-left</value>

<value>bow-tie</value>

<value>hourglass</value>

<value>circle</value>

<value>star</value>

<value>x</value>

<value>plus</value>

<value>asterisk</value>

<value>horizontal-bar</value>

<value>vertical-bar</value>

</choice>

</attribute>

</group>

<group>

<attribute name="chart:symbol-type">

<value>image</value>

</attribute>

<element name="chart:symbol-image">

<attribute name="xlink:href">

<ref name="anyURI"/>

</attribute>

</element>

</group>

<empty/>

</choice>

</define>

### Chart Symbol Size

The width and height of each symbol can be set using the attribute chart:symbol-width and chart:symbol-length.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:symbol-width">

<ref name="nonNegativeLength"/>

</attribute>

</optional>

<optional>

<attribute name="chart:symbol-height">

<ref name="nonNegativeLength"/>

</attribute>

</optional>

</define>

### Bar Chart Properties

The chart:vertical and chart:connect-bars properties are for bar charts only. chart:vertical determines whether the bars will be oriented horizontally or vertically. If chart:connect-bars is set to true, the data points (the top of the bars) are additionally connected by lines.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:vertical" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:connect-bars" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

With bar charts, the properties chart:gap-width and chart:overlap can be used to specify the relative size and distance of bars. The chart:gap-width attribute contains the relative width of the gap between bars for neighboring categories. The chart:overlap attributes determines how much bars within the same category overlap. Both are integral percentages.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:gap-width">

<ref name="integer"/>

</attribute>

</optional>

<optional>

<attribute name="chart:overlap">

<ref name="integer"/>

</attribute>

</optional>

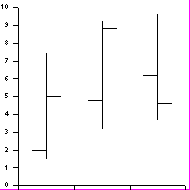
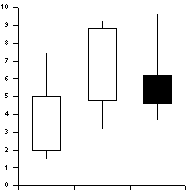
</define>

### Stock Chart Properties

These attributes are only effective for stock charts.

Stock charts display a span from minimum to maximum values as a straight line. Opening and closing courses can be displayed either as left and right tick-lines, respectively, or as colored bars, with their color depending on whether the opening value is larger than the closing value. The chart:japanese-candle-stick attribute distinguish between those two representations.

Example: A stock chart in Japanese-candle-stick fashion (left), and as default (right).



<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:japanese-candle-stick"

a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Line Chart Properties

For line chart-types, the attribute chart:interpolation can be set to one of the following values:

* none -Straight lines – don't use spline interpolation
* cubic-spline - Cubic Splines (chart:spline-resolution determines the number of interpolated points between two data points)
* b-spline - B-Splines (chart:spline-order determines the order of the polygons used for calculation. The chart:spline-resolution is also taken into account.)

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:interpolation" a:defaultValue="none">

<choice>

<value>none</value>

<value>cubic-spline</value>

<value>b-spline</value>

</choice>

</attribute>

</optional>

<optional>

<attribute name="chart:spline-order" a:defaultValue="2">

<ref name="positiveInteger"/>

</attribute>

</optional>

<optional>

<attribute name="chart:spline-resolution" a:defaultValue="20">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

### Pie Chart Properties

The chart:pie-offset attribute is only interpreted by pie charts. It determines the offset the tip of a 'pie' in a pie chart (or circle chart) has from the center of the circle.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:pie-offset" a:defaultValue="0">

<ref name="nonNegativeInteger"/>

</attribute>

</optional>

</define>

### Lines

The chart:lines property determines whether connecting lines between data points are shown. The line interpolation is determined by the chart:splines property.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:lines" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Solid Charts Bars

The chart:solid-type attribute determines how the bars in three-dimensional bar charts should be rendered.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:solid-type" a:defaultValue="cuboid">

<choice>

<value>cuboid</value>

<value>cylinder</value>

<value>cone</value>

<value>pyramid</value>

</choice>

</attribute>

</optional>

</define>

### Stacked Chart Bars

The attribute chart:stacked attribute causes bars in bar charts to be stacked on top of each other, instead of next to each other. If chart:percentage is set to true, the stacked bars will all be scaled to the full height of the plot area, so that the bar segments represent the percentage of their respective data point in the total bar stack.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:stacked" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="chart:percentage" a:defaultValue="false">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## Chart Axes Properties

The properties described in this section can be applied to chart axis elements (see section 10.8). They can be used within chart styles (see section 14.16) and are contained in a <style:chart-properties> element.

### Linked Data Formats

The chart:link-data-style-to-source attribute can only be used in chart documents that reside in a document that provides the data for the chart. If the value of the attribute is true, the number format used for rendering the axis is the format that the container document suggests based on the selected cell range. For example, if a cell range contains currencies all formatted in €, then this format will also be used at this axis.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:link-data-style-to-source">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Visibility

To determine whether or not an axis object is visible, use the chart:axis-visible style property. This way, a chart with scaling information can be provided without displaying the axis object.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:visible">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Scaling

If a scaling attribute is omitted, the axis is set to adaptation mode. This means that the value is not set to a fixed value but may be changed by the render application if data changes. However, the chart:axis-logarithmic attribute is set to false.

The optional chart:axis-logarithmic attribute can be used to cause logarithmic scaling on an axis. By default, proportional scaling is used.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:logarithmic">

<ref name="boolean"/>

</attribute>

</optional>

</define>

The following set of optional attributes further details the scaling of an axis. The properties have the following uses:

chart:minimum, chart:maximum – set minimal and maximal scaling values of an axis

chart:origin – determine the origin of the chart axis

chart:interval-major, chart:interval-minor-divisor – set major and minor interval for ticks or markings on the axis. The chart:interval-major defines the interval value. The minor interval is determined by dividing the chart:interval-major value by the chart:interval-minor-divisor.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:maximum">

<ref name="double"/>

</attribute>

</optional>

<optional>

<attribute name="chart:minimum">

<ref name="double"/>

</attribute>

</optional>

<optional>

<attribute name="chart:origin">

<ref name="double"/>

</attribute>

</optional>

<optional>

<attribute name="chart:interval-major">

<ref name="double"/>

</attribute>

</optional>

<optional>

<attribute name="chart:interval-minor-divisor">

<ref name="positiveInteger"/>

</attribute>

</optional>

</define>

### Tick Marks

The tick mark properties are used to specify the existence of tick marks at an axis. The major marks are drawn with respect to the major interval that may be specified by the chart:axis-interval-major attribute. The minor tick marks refer to the chart:axis-interval-minor attribute. Inner marks are drawn towards the inside of the plot area, that is to the right for an axis displayed on the left hand side of the plot area, and to the left for an axis displayed on the right hand side of the plot area. Outer marks point in the opposite direction. If both properties are specified, one tick mark is drawn that crosses the axis.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:tick-marks-major-inner">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="chart:tick-marks-major-outer">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="chart:tick-marks-minor-inner">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="chart:tick-marks-minor-outer">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Labels

The following set of properties describes how axis labels are being represented. chart:display-label determines whether labels will be displayed at all. If chart:text-overlap is set true, labels may overlap. text:line-break determines whether label lines may be broken into multiple lines.

The chart:label-arrangement property allows labels to be arranged either side-by-side (i.e., all labels start on one line), or staggered (i.e., labels are distributed to two lines, with every other label starting on the same line). In case of staggered labels, one can choose between even or odd staggering, i.e., one can choose whether even or odd labels are aligned on the line that would be used for side-by-side arrangement.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:display-label">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="chart:text-overlap">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="text:line-break">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="chart:label-arrangement"

a:defaultValue="side-by-side">

<choice>

<value>side-by-side</value>

<value>stagger-even</value>

<value>stagger-odd</value>

</choice>

</attribute>

</optional>

</define>

## Common Chart Properties

The properties described in this section apply to all types of data representation objects, including the elements <chart:plot-area>, <chart:series>, and <chart:data-point>. They can be used within chart styles (see section 14.16) and are contained in a <style:chart-properties> element.

Properties are applied in a hierarchical manner. If a property is set in the <chart:chart> element, it applies to all data points contained in the chart. If the same property is set in a <chart:series> element, it only applies to the data points contained in that specific series. To set a formatting property for one data point only, set the property in the <chart:data-point> element.

### Stacked Text

The property style:direction determines whether or not text is displayed vertically without rotating the letters. It can be applied to several text objects.

The value of this property can be ltr if text goes from left to right or ttb if the text is stacked, that is goes from top to bottom. It can be applied to several text objects. See section 15.11.3 for details.

<define name="style-chart-properties-attlist" combine="interleave">

<ref name="common-style-direction-attlist"/>

</define>

### Rotation Angle

The style:rotation-angle property specifies the value of a rotation angle in degrees. See section 15.11.12 for information on using this property.

<define name="style-chart-properties-attlist" combine="interleave">

<ref name="common-rotation-angle-attlist"/>

</define>

### Data Labels

Data labels can be applied to data series and data points as well as to an entire chart. In the latter case, labels are shown for all data points. Data labels can consist of the following three parts:

* The value, which can be displayed as a percentage or the value itself.
* The label of the corresponding series.
* The legend symbol.

#### Value

The chart:data-label-number attribute represents the value of the data label.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:data-label-number">

<choice>

<value>none</value>

<value>value</value>

<value>percentage</value>

</choice>

</attribute>

</optional>

</define>

#### Label

The chart:data-label-text attribute determines whether or not to display the label of the corresponding series.

The value of this attribute can be true or false.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:data-label-text">

<ref name="boolean"/>

</attribute>

</optional>

</define>

#### Legend Symbol

The chart:data-label-symbol attribute determines whether or not to display the legend symbol. The value of this attribute can be true or false.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:data-label-symbol">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## Statistical Properties

Statistical properties can be applied to data series or to an entire chart. In the latter case, the properties apply to all series in the chart. They can be used within chart styles (see section 14.16) and are contained in a <style:chart-properties> element.

### Mean Value

The chart:mean-value attribute determines whether or not to display a line that represents the statistical mean value of all data points of a series. The value of this attribute can be true or false.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:mean-value">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Error Category

The chart:error-category attribute is used to determine which function is used to display error indicators at data points. The following functions are available:

* Variance of the values of a series assuming an equal distribution.
* Standard-deviation of the values of a series assuming an equal distribution.
* Use a fixed percentage of each value
* Use a fixed percentage of the biggest value – this is called error-margin.
* Use fixed absolute values for both directions: positive and negative

If this attribute is set to any value other than none, error indicators are shown. To determine in which direction the indicators are pointing see the attributes chart:error-upper-indicator and chart:error-lower-indicator.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:error-category" a:defaultValue="none">

<choice>

<value>none</value>

<value>variance</value>

<value>standard-deviation</value>

<value>percentage</value>

<value>error-margin</value>

<value>constant</value>

</choice>

</attribute>

</optional>

</define>

#### Error Percentage

The chart:error-percentage attribute determines the percentage that is used to display error indicators for each data point of a series.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:error-percentage">

<ref name="double"/>

</attribute>

</optional>

</define>

#### Error Margin

The chart:error-margin attribute determines the percentage that is used to display error indicators for the biggest value in a series.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:error-margin">

<ref name="double"/>

</attribute>

</optional>

</define>

#### Constant Error Lower and Upper Limit

If the error category is set to constant, the chart:error-lower-limit and chart:error-upper-limit attributes determine the absolute values in a positive and negative direction that are used to display the error indicators.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:error-lower-limit">

<ref name="double"/>

</attribute>

</optional>

<optional>

<attribute name="chart:error-upper-limit">

<ref name="double"/>

</attribute>

</optional>

</define>

#### Error Indicators

The chart:error-lower-indicator and chart:error-upper-indicator attributes determine in which direction indicators should be drawn.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:error-upper-indicator">

<ref name="boolean"/>

</attribute>

</optional>

<optional>

<attribute name="chart:error-lower-indicator">

<ref name="boolean"/>

</attribute>

</optional>

</define>

## Plot Area Properties

The properties described in this section can be applied to chart plot area elements (see section 10.5). They can be used within chart styles (see section 14.16) and are contained in a <style:chart-properties> element.

### Series Source

The chart:series-source attribute determines whether the data table contains the data series in column-wise or row-wise fashion.

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:series-source" a:defaultValue="columns">

<choice>

<value>columns</value>

<value>rows</value>

</choice>

</attribute>

</optional>

</define>

## Regression Curve Properties

The properties described in this section can be applied to chart regression curves elements (see section 10.14). They can be used within chart styles (see section 14.16) and are contained in a <style:chart-properties> element.

### Regression Type

Use the chart:regression-type attribute to display a regression for a series. A regression can be used to approximate the data points in a series by a mathematical function. The following models for approximation are available:

* Linear regression – approximate the values of the series using the model: *y* = *A·x* + *B*.
* Logarithmic regression – approximate the values of the series using the model: *y* = *A*·log(*x*) + *B*.
* Exponential regression – approximate the values of the series using the model: *y* = *A·eB·x*.
* Regression with a power function – approximate the values of the series using the model: *y = A·xB*.

This property is only relevant in scatter charts, because regression needs both *x* and *y* values for calculation

<define name="style-chart-properties-attlist" combine="interleave">

<optional>

<attribute name="chart:regression-type" a:defaultValue="none">

<choice>

<value>none</value>

<value>linear</value>

<value>logarithmic</value>

<value>exponential</value>

<value>power</value>

</choice>

</attribute>

</optional>

</define>

## Presentation Page Attributes

The properties described in this section can be contained within style elements <style:style> whose family is drawing-page. They are contained in a <style:style-drawpage-properties> element.

The following presentation properties do exist:

* Background Size
* Background Objects Visible
* Background Visible
* Display Header
* Display Footer
* Display Page Number
* Display Date and Time

### Transition Type

The mode of transition, for example manual, can be set using the attribute presentation:transition-type.

* manual: slide transition and shape effects must be started separately by the user.
* automatic: slide transition and shape effects start automatically.
* semi-automatic: slide transition starts automatically, shape effects must be started by the user.

<define name="style-drawing-page-properties-attlist"

combine="interleave">

<optional>

<attribute name="presentation:transition-type">

<choice>

<value>manual</value>

<value>automatic</value>

<value>semi-automatic</value>

</choice>

</attribute>

</optional>

</define>

### Transition Style

The attribute presentation:transition-style specifies the way that each presentation page replaces the previous presentation page, for example left-to-right replacement, or fading.

* none: no effect is used.
* fade-\*: the pages fades from a visible or hidden state to a hidden or visible state in the specified direction.
* move-\*: the page moves in the specified direction to its final position.
* uncover-\*: the page get uncovered in the specified direction.
* \*-stripes: the page is uncovered by drawing horizontal or vertical stripes that change their size during this effect.
* clockwise: the page is uncovered by the hand of a watch, moving clockwise.
* counterclockwise: the page is uncovered by the hand of a watch, moving counterclockwise.
* open-\*: the page is uncovered by drawing it line by line, either horizontally or vertically, starting at the center of the page.
* close-\*: the page is uncovered by drawing it line by line, either horizontally or vertically, starting at the edge of the page.
* wavyline-\*: the page is uncovered by drawing small blocks in a snake like fashion.
* spiralin-\*: the page is uncovered by drawing blocks in a spiral fashion, starting from the edge of the page.
* spiralout-\*: the page is uncovered by drawing blocks in a spiral fashion, starting from the center of the page.
* roll-\*: the pages moves in the specified direction to its final position, pushing the old page out.
* stretch-\*: the page is uncovered by changing its size during this effect.
* \*-lines: the page is uncovered by drawing it line by line, either horizontally or vertically in a random fashion.
* dissolve: the page is faded in by drawing small blocks in a random fashion.
* random: an effect is chosen at random to uncover the page.
* \*-checkerboard: the page is uncovered by drawing checkerboard like blocks that increase in size horizontally or vertically.
* interlocking-horizontal-\*: the new page appears in 4 horizontal stripes (i.e., the height is divided in 4, a bit like in the horizontal-stripes effect) but those stripes come from left, right, left, and right, and cross each other in the middle of the screen.
* interlocking-vertical-\*: similar effect with vertical stripes crossing each other.
* fly-away: the page first reduces itself to a smaller size (while remaining centered in the screen), and then "flies away" (turns around a bit and moves to the bottom-right corner of the screen). The next slide appears under it meanwhile.
* open: Combination of open-horizontal and open-vertical, i.e., a sort of *plus* sign opening.
* close: Combination of close-horizontal and close-vertical, i.e., a sort of *plus* sign closing.
* melt: Small vertical stripes move down at random speed, which gives the effect of the current page "melting down".

<define name="style-drawing-page-properties-attlist"

combine="interleave">

<optional>

<attribute name="presentation:transition-style">

<choice>

<value>none</value>

<value>fade-from-left</value>

<value>fade-from-top</value>

<value>fade-from-right</value>

<value>fade-from-bottom</value>

<value>fade-from-upperleft</value>

<value>fade-from-upperright</value>

<value>fade-from-lowerleft</value>

<value>fade-from-lowerright</value>

<value>move-from-left</value>

<value>move-from-top</value>

<value>move-from-right</value>

<value>move-from-bottom</value>

<value>move-from-upperleft</value>

<value>move-from-upperright</value>

<value>move-from-lowerleft</value>

<value>move-from-lowerright</value>

<value>uncover-to-left</value>

<value>uncover-to-top</value>

<value>uncover-to-right</value>

<value>uncover-to-bottom</value>

<value>uncover-to-upperleft</value>

<value>uncover-to-upperright</value>

<value>uncover-to-lowerleft</value>

<value>uncover-to-lowerright</value>

<value>fade-to-center</value>

<value>fade-from-center</value>

<value>vertical-stripes</value>

<value>horizontal-stripes</value>

<value>clockwise</value>

<value>counterclockwise</value>

<value>open-vertical</value>

<value>open-horizontal</value>

<value>close-vertical</value>

<value>close-horizontal</value>

<value>wavyline-from-left</value>

<value>wavyline-from-top</value>

<value>wavyline-from-right</value>

<value>wavyline-from-bottom</value>

<value>spiralin-left</value>

<value>spiralin-right</value>

<value>spiralout-left</value>

<value>spiralout-right</value>

<value>roll-from-top</value>

<value>roll-from-left</value>

<value>roll-from-right</value>

<value>roll-from-bottom</value>

<value>stretch-from-left</value>

<value>stretch-from-top</value>

<value>stretch-from-right</value>

<value>stretch-from-bottom</value>

<value>vertical-lines</value>

<value>horizontal-lines</value>

<value>dissolve</value>

<value>random</value>

<value>vertical-checkerboard</value>

<value>horizontal-checkerboard</value>

<value>interlocking-horizontal-left</value>

<value>interlocking-horizontal-right</value>

<value>interlocking-vertical-top</value>

<value>interlocking-vertical-bottom</value>

<value>fly-away</value>

<value>open</value>

<value>close</value>

<value>melt</value>

</choice>

</attribute>

</optional>

</define>

### Transition Speed

The attribute presentation:transition-speed controls the speed at which a presentation page is removed from display, and replaced by a new presentation page. See also section 9.7.2.

<define name="style-drawing-page-properties-attlist"

combine="interleave">

<optional>

<attribute name="presentation:transition-speed">

<ref name="presentationSpeeds"/>

</attribute>

</optional>

</define>

### Transition Type or Family

The [SMIL20] smil:type attribute is used to specify the transition type or family. See §12.4.1 of [SMIL20] for details. See §12.8 of [SMIL20] for a list of supported types.

If this attribute is present, the attributes presentation:transition-type and presentation:transition-style attributes should be ignored.

<define name="style-drawing-page-properties-attlist " combine="interleave">

<optional>

<attribute name="smil:type">

<ref name="string"/>

</attribute>

</optional>

</define>

### Transition Subtype

The [SMIL20] smil:subtype attribute is used to specify the transition subtype. See §12.4.1 of [SMIL20] for details. See §12.8 of [SMIL20] for a list of supported subtypes.

<define name="style-drawing-page-properties-attlist" combine="interleave">

<optional>

<attribute name="smil:subtype">

<ref name="string"/>

</attribute>

</optional>

</define>

### Transition Direction

The [SMIL20] smil:direction attribute is used to specify the transition direction. See §12.4.1 of [SMIL20] for details.

<define name="style-drawing-page-properties-attlist" combine="interleave">

<optional>

<attribute name="smil:direction" a:defaultValue="forward">

<choice>

<value>forward</value>

<value>reverse</value>

</choice>

</attribute>

</optional>

</define>

### Fade Color

The [SMIL20] smil:fadeColor attribute is used to specify the transition fade color for transitions that make use of a start or end color. See §12.4.1 of [SMIL20] for details.

<define name="style-drawing-page-properties-attlist" combine="interleave">

<optional>

<attribute name="smil:fadeColor">

<ref name="color"/>

</attribute>

</optional>

</define>

### Page Duration

The attribute presentation:page-duration controls the amount of time that the presentation page is displayed. The value of this attribute must conform to the time period format described in §3.2.6 of [xmlschema-2].

<define name="style-drawing-page-properties-attlist"

combine="interleave">

<optional>

<attribute name="presentation:duration">

<ref name="duration"/>

</attribute>

</optional>

</define>

### Page Visibility

A drawing page can be marked as hidden during a presentation by using the attribute presentation:visibility. A page marked with this attribute is only shown while editing the document but not during the presentation.

<define name="style-drawing-page-properties-attlist"

combine="interleave">

<optional>

<attribute name="presentation:visibility">

<choice>

<value>visible</value>

<value>hidden</value>

</choice>

</attribute>

</optional>

</define>

### Sound

Sound effects can be added to your presentation pages using the element presentation:sound. It must be included in the <style:presentation-properties> element.

<define name="style-drawing-page-properties-elements"

combine="interleave">

<optional>

<ref name="presentation-sound"/>

</optional>

</define>

### Background Size

The attribute draw:background-size specifies whether the background of a page is rendered on the full page or only inside the borders of the page.

<define name="style-drawing-page-properties-attlist"

combine="interleave">

<optional>

<attribute name="draw:background-size">

<choice>

<value>full</value>

<value>border</value>

</choice>

</attribute>

</optional>

</define>

### Background Objects Visible

The attribute presentation:background-objects-visible specifies whether or not to hide objects on the background of the master page when displaying the presentation page.

<define name="style-drawing-page-properties-attlist"

combine="interleave">

<optional>

<attribute name="presentation:background-objects-visible">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Background Visible

The attribute presentation:background-visible specifies whether or not to hide the background of the master page when displaying the presentation page.

<define name="style-drawing-page-properties-attlist"

combine="interleave">

<optional>

<attribute name="presentation:background-visible">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Display Header

The presentation:display-header attribute sets the visibility of presentation shapes from the master page with the presentation class header (see section 9.6.1).

<define name="style-drawing-page-properties-attlist" combine="interleave">

<optional>

<attribute name="presentation:display-header">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Display Footer

The presentation:display-footer attribute sets the visibility of presentation shapes from the master page with the presentation class footer (see section 9.6.1).

<define name="style-drawing-page-properties-attlist" combine="interleave">

<optional>

<attribute name="presentation:display-footer">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Display Page Number

The presentation:display-page-number attribute sets the visibility of presentation shapes from the master page with the presentation class page-number (see section 9.6.1).

<define name="style-drawing-page-properties-attlist" combine="interleave">

<optional>

<attribute name="presentation:display-page-number">

<ref name="boolean"/>

</attribute>

</optional>

</define>

### Display Date And Time

The presentation:display-date-time attribute sets the visibility of presentation shapes from the master page with the presentation class date-time (see section 9.6.1).

<define name="style-drawing-page-properties-attlist" combine="interleave">

<optional>

<attribute name="presentation:display-date-time">

<ref name="boolean"/>

</attribute>

</optional>

</define>

1. Data Types and Schema Definitions

## Data Types

The following data types are used within this specification:

* W3C Schema data types as defined in [xmlschema-2] (referenced by <ref> elements named the same as the corresponding data types)
  + string
  + date
  + time
  + dateTime
  + duration
  + integer
  + nonNegativeInteger
  + positiveInteger
  + double
  + anyURI
  + base64Binary
  + ID
  + IDREF
  + IDREFS

Relax-NG definitions for the W3C schema data types:

<define name="string">

<data type="string"/>

</define>

<define name="date">

<data type="date"/>

</define>

<define name="time">

<data type="time"/>

</define>

<define name="dateTime">

<data type="dateTime"/>

</define>

<define name="duration">

<data type="duration"/>

</define>

<define name="integer">

<data type="integer"/>

</define>

<define name="nonNegativeInteger">

<data type="nonNegativeInteger"/>

</define>

<define name="positiveInteger">

<data type="positiveInteger"/>

</define>

<define name="double">

<data type="double"/>

</define>

<define name="anyURI">

<data type="anyURI"/>

</define>

<define name="base64Binary">

<data type="base64Binary"/>

</define>

<define name="ID">

<data type="ID"/>

</define>

<define name="IDREF">

<data type="IDREF"/>

</define>

<define name="IDREFS">

<data type="IDREFS"/>

</define>

* custom data types (usually specializations of W3C Schema data types)
  + boolean

A Boolean value may have either of the values true or false.

* + dateOrDateTime

A dateOrDateTime value is essentially an [xmlschema-2] date and time value with an optional time component. In other words, it may contain either a date, or a date and time value.

* + timeOrDateTime

A timeOrDateTime value is essentially an [xmlschema-2] date and time value with an optional date component. In other words, it may contain either a time, or a date and time value.

* + language

A language is the same as an [xmlschema-2] language data type.

* + countryCode

A countryCode is a country code in conformance with [RFC3066], as specified in [XSL].

* + languageCode

A languageCode is a language code in conformance with [RFC3066], as specified in [XSL].

* + character

A character value is a string with only one character.

* + length

A (positive or negative) physical length, consisting of magnitude and unit, in conformance with §5.9.11 of [XSL]. Supported units are „cm“, „mm“, „in“, „pt“ and „pc“. Applications shall support all these units. Applications may also support “px” (pixel). Where the description of an attribute explicitly states that pixel lengths are supported, applications should support them.

Examples for valid lengths are “2.54cm” and “1in”.

* + nonNegativeLength

Like length, except that the value must be zero or positive.

* + positiveLength

Like length, except that the value must be positive.

* + percent

(Positive or negative) percentage values in conformance with §5.9.11 of [XSL], e.g., “40%”.

* + relativeLength

A relative length is a positive integer, followed by a '\*' character.

* + coordinate

Like a length, except that the physical length denotes a certain point.

* + distance

Like a length, except that the physical length measures the distance between to points.

* + color

A RGB color in conformance with §5.9.11 of [XSL], that is a RGB color in notation “#rrggbb”, where rr, gg and bb are hexadecimal digits.

* + styleName

A NCName as specified in [xmlschema-2] that is the name of a style.

* + StyleNameRef

A NCName as specified in [xmlschema-2] that is the name of a referenced style, or an empty value.

* + StyleNames

A whitespace separated list of NCNames as specified in [xmlschema-2] that are the names of a styles.

* + VariableName

A string specifying the name of a variable

* + formula

A string containing a formula. Formulas don't have a predefined syntax, but should start with a namespace prefix that specifies the syntax used within the formula.

* + valueType

A list of value types supported for certain generic values, such as “string” or “date”.

* + targetFrameName

The name of a target frame in conformance with §6.16 of [HTML4].

* + points

A sequence of points. The points are two integer coordinates separated by a comma. The points are separated by white space.

* + pathData

Path data as described in §8 of [SVG].

* + vector3D

A 3-element vector that is represented by floating point x,y,z coordinates. The coordinates are encapsulated between parentheses and the coordinates are noted in the order x, y and z, separated by whitespaces. If this value represents a normal, then it should be normalized.

**Example:** A directional vector with the coordinates x = 0.5, y = 0 and z = 1 looks like "(0.5 0 1)".

* + namespacedToken

A namespaced token is a token id that makes use of the XML namespace mechanism for modularization purposes.

Example: The predefined chart types make use of the chart namespace urn:oasis:names:tc:opendocument:xmlns:chart:1.0. Assuming a namespace declaration of xmlns:chart="urn:oasis:names:tc:opendocument:xmlns:chart:1.0", a bar chart would be identified as chart:bar.

Relax-NG definitions for custom data types:

<define name="boolean">

<choice>

<value>true</value>

<value>false</value>

</choice>

</define>

<define name="dateOrDateTime">

<choice>

<data type="date"/>

<data type="dateTime"/>

</choice>

</define>

<define name="timeOrDateTime">

<choice>

<data type="time"/>

<data type="dateTime"/>

</choice>

</define>

<define name="language">

<data type="language"/>

</define>

<define name="countryCode">

<data type="token">

<param name="pattern">[A-Za-z0-9]{1,8}</param>

</data>

</define>

<define name="languageCode">

<data type="token">

<param name="pattern">[A-Za-z]{1,8}</param>

</data>

</define>

<define name="character">

<data type="string">

<param name="length">1</param>

</data>

</define>

<define name="length">

<data type="string">

<param name="pattern">-?([0-9]+(\.[0-9]\*)?|\.[0-9]+)((cm)|(mm)|(in)|(pt)|(pc)|(px))</param>

</data>

</define>

<define name="nonNegativeLength">

<data type="string">

<param name="pattern">([0-9]+(\.[0-9]\*)?|\.[0-9]+)((cm)|(mm)|(in)|(pt)|(pc)|(px))</param>

</data>

</define>

<define name="positiveLength">

<data type="string">

<param name="pattern">([0-9]\*[1-9][0-9]\*(\.[0-9]\*)?|0+\.[0-9]\*[1-9][0-9]\*|\.[0-9]\*[1-9][0-9]\*)((cm)|(mm)|(in)|(pt)|(pc)|(px))</param>

</data>

</define>

<define name="percent">

<data type="string">

<param name="pattern">-?([0-9]+(\.[0-9]\*)?|\.[0-9]+)%</param>

</data>

</define>

<define name="relativeLength">

<data type="string">

<param name="pattern">[0-9]+\\*</param>

</data>

</define>

<define name="coordinate">

<ref name="length"/>

</define>

<define name="distance">

<ref name="length"/>

</define>

<define name="color">

<data type="string">

<param name="pattern">#[0-9a-fA-F]{6}</param>

</data>

</define>

<define name="styleName">

<data type="NCName"/>

</define>

<define name="styleNameRef">

<choice>

<data type="NCName"/>

<empty/>

</choice>

</define>

<define name="styleNameRefs">

<list>

<zeroOrMore>

<data type="NCName"/>

</zeroOrMore>

</list>

</define>

<define name="variableName">

<data type="string"/>

</define>

<define name="formula">

<!-- A formula should start with a namespace prefix, -->

<!-- but has no restrictions-->

<data type="string"/>

</define>

<define name="targetFrameName">

<choice>

<value>\_self</value>

<value>\_blank</value>

<value>\_parent</value>

<value>\_top</value>

<ref name="string"/>

</choice>

</define>

<define name="valueType">

<choice>

<value>float</value>

<value>time</value>

<value>date</value>

<value>percentage</value>

<value>currency</value>

<value>boolean</value>

<value>string</value>

</choice>

</define>

<define name="points">

<data type="string">

<param name="pattern">-?[0-9]+,-?[0-9]+([ ]+-?[0-9]+,-?[0-9]+)\*</param>

</data>

</define>

<define name="pathData">

<data type="string"/>

</define>

<define name="vector3D">

<data type="string">

<param name="pattern">\([ ]\*-?([0-9]+(\.[0-9]\*)?|\.[0-9]+)([ ]+-?([0-9]+(\.[0-9]\*)?|\.[0-9]+)){2}[ ]\*\)</param>

</data>

</define>

<define name="namespacedToken">

<data type="string">

<param name="pattern">[0-9a-zA-Z\_]+:[0-9a-zA-Z.\_\-]+</param>

</data>

</define>

## Other Definitions

To provide for extensibility of the format, inclusion of custom content is allowed on several occasions. The following definitions allow for inclusion of arbitrary attributes or elements (with arbitrary content models).

<define name="anyAttListOrElements">

<zeroOrMore>

<attribute>

<anyName/>

<text/>

</attribute>

</zeroOrMore>

<ref name="anyElements"/>

</define>

<define name="anyElements">

<zeroOrMore>

<element>

<anyName/>

<mixed>

<ref name="anyAttListOrElements"/>

</mixed>

</element>

</zeroOrMore>

</define>

## Relax-NG Schema Suffix

Suffix for the normative Relax-NG schema:

</grammar>

1. Packages

This chapter describes the package format that optionally can be used in OpenDocument. It contains the following sections:

* Introduction
* Zip File Structure
* Encryption
* Preview Image
* Manifest File

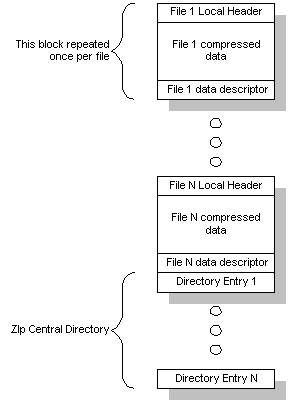
## Introduction

As XML has no native support for binary objects such as images, [OLE] objects, or other media types, and because uncompressed XML files can get very large, OpenDocument uses a package file to store the XML content of a document together with its associated binary data, and to optionally compress the XML content. This package is a standard Zip file, whose structure is discussed below.

Information about the files contained in the package is stored in an XML file called the manifest file. The manifest file is always stored at the pathname META-INF/manifest.xml. The main pieces of information stored in the manifest are as follows:

* A list of all of the files in the package.
* The media type of each file in the package.
* If a file stored in the package is encrypted, the information required to decrypt the file is stored in the manifest.

## Zip File Structure

A Zip file starts with a sequence of files, each of which can be compressed or stored in raw format. Each file has a local header immediately before its data, which contains most of the information about the file, including time-stamps, compression method and file name. The compressed file contents immediately follow, and are terminated by an optional data descriptor. The data descriptor contains the CRC and compressed size of the file, which are frequently not available when writing the local file header. If these details were included, the data descriptor can be skipped.

Each file in the archive is laid down sequentially in this format, followed by a central directory at the end of the Zip archive. The central directory is a contiguous set of directory entries, each of which contains all the information in the local file header, plus extras such as file comments and attributes. Most importantly, the central directory contains pointers to the position of each file in the archive, which makes navigation of the Zip file quick and easy.

For more details about the Zip file format, see [ZIP].

## Encryption

The encryption process takes place in the following multiple stages:

1. A 20-byte SHA1 digest of the user entered password is created and passed to the package component.
2. The package component initializes a random number generator with the current time.
3. The random number generator is used to generate a random 8-byte initialization vector and 16-byte salt for each file.
4. This salt is used together with the 20-byte SHA1 digest of the password to derive a unique 128-bit key for each file. The algorithm used to derive the key is PBKDF2 using HMAC-SHA-1 (see [RFC2898]) with an iteration count of 1024.
5. The derived key is used together with the initialization vector to encrypt the file using the Blowfish algorithm in cipher-feedback (CFB) mode.

Each file that is encrypted is compressed before being encrypted. To allow the contents of the package file to be verified, it is necessary that encrypted files are flagged as 'STORED' rather than 'DEFLATED'. As entries which are 'STORED' must have their size equal to the compressed size, it is necessary to store the uncompressed size in the manifest. The compressed size is stored in both the local file header and central directory record of the Zip file.

## MIME Type Stream

If a MIME type for a document that makes use of packages is existing, then the package should contain a stream called "mimetype". This stream should be first stream of the package's zip file, it shall not be compressed, and it shall not use an 'extra field' in its header (see [ZIP]).

The purpose is to allow packaged files to be identified through 'magic number' mechanisms, such as Unix's file/magic utility. If a ZIP file contains a stream at the beginning of the file that is uncompressed, and has no extra data in the header, then the stream name and the stream content can be found at fixed positions. More specifically, one will find:

* a string 'PK' at position 0 of all zip files
* a string 'mimetype' at position 30 of all such package files
* the mimetype itself at position 38 of such a package.

## Usage of IRIs Within Packages

Within a file that is contained in a package, relative IRIs are used to reference other sub files of the package, but can also be used to reference files within the file system.

The following restrictions exist for IRIs that are used within a package:

* only sub files within the same package and files outside the package can be referenced.
* IRIs that reference a sub file of a package shall be relative, and they shall not contain paths that are not within the package. This especially means that sub files of a package shall not be referenced by an absolute IRI.
* sub file of a package can not be referenced from outside the package, for instance from the file system or another package.

A relative-path reference (as described in §6.5 of [RFC3987]) that occurs in a file that is contained in a package has to be resolved exactly as it would be resolved if the whole package gets unzipped into a directory at its current location. The base IRI for resolving relative-path references is the one that has to be used to retrieve the (unzipped) file that contains the relative-path reference.

All other kinds of IRI references, namely the ones that start with a protocol (like http:), an authority (i.e., //) or an absolute-path (i.e., /) do not need any special processing. This especially means that absolute-paths do not reference files inside the package, but within the hierarchy the package is contained in, for instance the file system. IRI references inside a package may leave the package, but once they have left the package, they never can return into the package or another one.

## Preview Image

A thumbnail representation of a document should be generated by default when the file is saved. It should be a representation of the first page, first sheet, etc. of the document. For maximum reusability of the thumbnails they have to be generated without any effects, surrounding frames, or borders. Such effects might interfere with effects added to the thumbnails by the different file system explorers or may not be desired at all for certain use cases.

The thumbnail must be saved as “thumbnail.png” in a separate folder named “Thumbnails”.

The “Thumbnails” folder must not get a media type in the manifest.xml file, since it is not actually part of the document.

Encrypted files are intended to be unreadable for unauthorized users that's why a thumbnail for such files must not be generated. Instead of saving a thumbnail of the first page a replacement representation that doesn't depend on the contents of the document is saved for encrypted files which makes obvious that the corresponding file is encrypted.

In order to conform to the Thumbnail Managing Standard (TMS) at www.freedesktop.org, thumbnails must be saved as 24bit, non-interlaced PNG image with full alpha transparency. The required size for the thumbnails is 128x128 pixel.

## Manifest File

The elements and attributes in the manifest file are in the namespace: urn:oasis:names:tc:opendocument:xmlns:manifest:1.0.

### Relax-NG Schema

The normative XML Schema for OpenDocument Manifest files is embedded within this specification. It can be obtained from the specification document by concatenating all schema fragments contained in this chapters. All schema fragments have a gray background color and line numbers.

The schema language used within this specification is Relax-NG (see [RNG]).

Prefix for the normative Relax-NG Manifest schema:

<?xml version="1.0" encoding="UTF-8"?>

<!--

OASIS OpenDocument v1.1

OASIS Standard, 1 Feb 2007

Relax-NG Manifest Schema

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-->

<grammar

xmlns="http://relaxng.org/ns/structure/1.0"

datatypeLibrary="http://www.w3.org/2001/XMLSchema-datatypes"

xmlns:manifest="urn:oasis:names:tc:opendocument:xmlns:manifest:1.0">

### Manifest Root Element

The root element is called manifest. The root element contains one fixed attribute which specifies the namespace as described above and multiple <manifest:file-entry> elements, each of which describes a single file in the package.

<define name="manifest">

<element name="manifest:manifest">

<oneOrMore>

<ref name="file-entry"/>

</oneOrMore>

</element>

</define>

<start>

<choice>

<ref name="manifest"/>

</choice>

</start>

### File Entry

The <manifest:file-entry> element represents a single file within the package, and stores the files location in the package, the mime-type of the file and optionally the data required to decrypt this file.

Directories only receive <manifest:file-entry> entries if they have inherent semantics. For example, a directory that constitutes a sub-document referenced as an object from within the main document would contain a <manifest:file-entry> with a suitable media type. A directory for administrative or convenience purposes, such as a directory that contains various image files, would not receive an entry in the manifest file.

<define name="file-entry">

<element name="manifest:file-entry">

<ref name="file-entry-attlist"/>

<optional>

<ref name="encryption-data"/>

</optional>

</element>

</define>

The attributes associated with a <manifest:file-entry> are as follows:

* Full path
* Size
* Media type

#### Full Path

The manifest:full-path attribute describes the location of the file within the package.

<define name="file-entry-attlist" combine="interleave">

<attribute name="manifest:full-path">

<data type="string"/>

</attribute>

</define>

#### Size

The manifest:size attribute is only present if the file is stored in an encrypted format. The reason why this attribute is required is explained in section 17.3. This attribute is only used for encrypted files.

<define name="file-entry-attlist" combine="interleave">

<optional>

<attribute name="manifest:size">

<data type="nonNegativeInteger"/>

</attribute>

</optional>

</define>

#### Media Type

The manifest:media-type attribute specifies the mime type of the specified file. For a full list of mime types see <http://www.isi.edu/in-notes/iana/assignments/media-types/media-types>. As an example, all XML streams have the media type "text/xml".

<define name="file-entry-attlist" combine="interleave">

<attribute name="manifest:media-type">

<data type="string"/>

</attribute>

</define>

### Encryption Data

The <manifest:encryption-data> element contains all of the information required to decrypt the file.

<define name="encryption-data">

<element name="manifest:encryption-data">

<ref name="encryption-data-attlist"/>

<ref name="algorithm"/>

<ref name="key-derivation"/>

</element>

</define>

The <encryption-data> element contains the following elements:

* Algorithm
* Key Derivation

#### Checksum Type

The manifest:checksum-type attribute specifies the name of digest algorithm that can be used to check password correctness. Currently, the only supported digest algorithm is SHA1.

<define name="encryption-data-attlist" combine="interleave">

<attribute name="manifest:checksum-type">

<data type="string"/>

</attribute>

</define>

#### Checksum

The manifest:checksum attribute specifies the digest in BASE64 encoding (as defined in [RFC2045]) that can be used to detect password correctness as specified within manifest:checksum-type attribute.

<define name="encryption-data-attlist" combine="interleave">

<attribute name="manifest:checksum">

<data type="base64Binary"/>

</attribute>

</define>

### Algorithm

The <manifest:algorithm> element contains information about the algorithm used to encrypt the data.

<define name="algorithm">

<element name="manifest:algorithm">

<ref name="algorithm-attlist"/>

<empty/>

</element>

</define>

The attributes associated with <manifest:algorithm> are as follows:

* Algorithm name
* Initialization vector

#### Algorithm Name

The manifest:algorithm-name attribute specifies the name of the algorithm used to encrypt the file, and also specifies in which mode this algorithm was used. Currently, the only supports algorithm is the Blowfish algorithm in CFB mode.

<define name="algorithm-attlist" combine="interleave">

<attribute name="manifest:algorithm-name">

<data type="string"/>

</attribute>

</define>

#### Initialization Vector

The manifest:initialisation-vector attribute specifies the 8 bytes used as an initialization vector to the stream cipher. The initialization vector is an 8 byte binary sequence, and so is encoded in BASE64 (as defined in [RFC2045]) when written to the manifest file.

<define name="algorithm-attlist" combine="interleave">

<attribute name="manifest:initialisation-vector">

<data type="base64Binary"/>

</attribute>

</define>

### Key Derivation

The <manifest:key-derivation> element contains the information that was used to derive the encryption key for this file from the user specified password.

<define name="key-derivation">

<element name="manifest:key-derivation">

<ref name="key-derivation-attlist"/>

<empty/>

</element>

</define>

The attributes associated with the <manifest:key-derivation> element are as follows:

* Key derivation name
* Salt
* Iteration count

#### Key Derivation Name

The manifest:key-derivation-name attribute specifies the name of the algorithm used to derive the name. At this time, the packages only supports the use of the PBKDF2 key derivation method. For further details see [RFC2898].

<define name="key-derivation-attlist" combine="interleave">

<attribute name="manifest:key-derivation-name">

<data type="string"/>

</attribute>

</define>

#### Salt

The manifest:salt attribute specifies the 16-byte sequence used as the 'salt' by the key derivation algorithm. The salt is a 16-byte binary sequence, and thus is encoded in BASE64 (as defined in [RFC2045]) before being written to the manifest file.

<define name="key-derivation-attlist" combine="interleave">

<attribute name="manifest:salt">

<data type="base64Binary"/>

</attribute>

</define>

#### Iteration Count

The manifest:iteration-count attribute specifies the number of iterations used by the key derivation algorithm to derive the key.

<define name="key-derivation-attlist" combine="interleave">

<attribute name="manifest:iteration-count">

<data type="nonNegativeInteger"/>

</attribute>

</define>

Sample Manifest

<manifest:manifest

xmlns:manifest="urn:oasis:names:tc:opendocument:xmlns:manifest:1.0">

<manifest:file-entry

manifest:media-type="application/vnd.oasis.opendocument.text"

manifest:full-path="/"/>

<manifest:file-entry manifest:media-type="image/jpeg"

manifest:full-path="Pictures/100000000000032000000258912EB1C3.jpg"

manifest:size="66704">

<manifest:encryption-data>

<manifest:algorithm manifest:algorithm-name="Blowfish CFB"

manifest:initialisation-vector="T+miu403484="/>

<manifest:key-derivation manifest:key-derivation-name="PBKDF2"

manifest:iteration-count="1024"

manifest:salt="aNYdmqv4cObAJSJjm4RzqA=="/>

</manifest:encryption-data>

</manifest:file-entry>

<manifest:file-entry

manifest:media-type="text/xml" manifest:full-path="content.xml"

manifest:size="3143">

<manifest:encryption-data>

<manifest:algorithm manifest:algorithm-name="Blowfish CFB"

manifest:initialisation-vector="T+miu403484="/>

<manifest:key-derivation manifest:key-derivation-name="PBKDF2"

manifest:iteration-count="1024"

manifest:salt="aNYdmqv4cObAJSJjm4RzqA=="/>

</manifest:encryption-data>

</manifest:file-entry>

<manifest:file-entry manifest:media-type="text/xml"

manifest:full-path="styles.xml" manifest:size="5159">

<manifest:encryption-data>

<manifest:algorithm manifest:algorithm-name="Blowfish CFB"

manifest:initialisation-vector="bChL2No5I+A="/>

<manifest:key-derivation manifest:key-derivation-name="PBKDF2"

manifest:iteration-count="1024"

manifest:salt="/kfasyu7X0Ae+1uopdeCtA=="/>

</manifest:encryption-data>

</manifest:file-entry>

<manifest:file-entry

manifest:media-type="text/xml" manifest:full-path="meta.xml"/>

<manifest:file-entry

manifest:media-type="text/xml"

manifest:full-path="settings.xml" manifest:size="5317">

<manifest:encryption-data>

<manifest:algorithm manifest:algorithm-name="Blowfish CFB"

manifest:initialisation-vector="JQxEm6rD+4c="/>

<manifest:key-derivation manifest:key-derivation-name="PBKDF2"

manifest:iteration-count="1024"

manifest:salt="PlpDaxloh4KUKx+v1g4V9g=="/>

</manifest:encryption-data>

</manifest:file-entry>

</manifest:manifest>

### Relax-NG Schema Suffix

Suffix for the normative Relax-NG Manifest schema:

</grammar>

1. Strict Relax NG Schema

The Relax-NG (see [RNG])schema provided in this appendix equals the schema defined in chapters 1 to 16 of this specification, but restricts the content of meta information elements and formatting properties elements to the attributes and elements defined in this specification. See also section 1.5.

<?xml version="1.0" encoding="UTF-8"?>

<!--

OASIS OpenDocument v1.1

OASIS Standard, 1 Feb 2007

Strict Relax-NG Schema

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-->

<grammar xmlns="http://relaxng.org/ns/structure/1.0">

<include href="OpenDocument-schema-v1.1.rng">

<define name="office-meta-content">

<ref name="office-meta-content-strict"/>

</define>

<define name="style-page-layout-properties-content">

<ref name="style-page-layout-properties-content-strict"/>

</define>

<define name="style-header-footer-properties-content">

<ref name="style-header-footer-properties-content-strict"/>

</define>

<define name="style-drawing-page-properties-content">

<ref name="style-drawing-page-properties-content-strict"/>

</define>

<define name="style-text-properties-content">

<ref name="style-text-properties-content-strict"/>

</define>

<define name="style-paragraph-properties-content">

<ref name="style-paragraph-properties-content-strict"/>

</define>

<define name="style-ruby-properties-content">

<ref name="style-ruby-properties-content-strict"/>

</define>

<define name="style-section-properties-content">

<ref name="style-section-properties-content-strict"/>

</define>

<define name="style-list-level-properties-content">

<ref name="style-list-level-properties-content-strict"/>

</define>

<define name="style-table-properties-content">

<ref name="style-table-properties-content-strict"/>

</define>

<define name="style-table-column-properties-content">

<ref name="style-table-column-properties-content-strict"/>

</define>

<define name="style-table-row-properties-content">

<ref name="style-table-row-properties-content-strict"/>

</define>

<define name="style-table-cell-properties-content">

<ref name="style-table-cell-properties-content-strict"/>

</define>

<define name="style-graphic-properties-content">

<ref name="style-graphic-properties-content-strict"/>

</define>

<define name="style-chart-properties-content">

<ref name="style-chart-properties-content-strict"/>

</define>

</include>

</grammar>

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1. MIME Types and File Name Extensions (Non Normative)

The MIME types and extensions contained in this section are applicable only to office documents that are contained in a package (see section 2.1). See section 1.7 for the MIME type to use for documents that are not contained in a package.

The following table contains a list of MIME types and extensions for documents that conform to this specification, that, at the time this specification is published, have been registered according to [RFC2048]. Please see [MIMETYPES] for a current list of registered MIME types.

| MIME type | Ext. | Description |
| --- | --- | --- |
| No registered MIME types exist at the time this specification is published. | | |

The following table contains a list of MIME types and extensions for office documents that conform to this specification where a registration according to [RFC2048] is in progress at the time this specification is published.

Please check [MIMETYPES] before using these MIME types. If a MIME type is not listed there, the MIME type that is the result of inserting "x-" behind the "/" character (i.e., application/x-vnd.oasis.opendocument.text) should be used.

| MIME type | Ext. | Description |
| --- | --- | --- |
| application/vnd.oasis.opendocument.text | odt | Text document |
| application/  vnd.oasis.opendocument.text-template | ott | Text document used as template |
| application/vnd.oasis.opendocument.graphics | odg | Graphics document (Drawing) |
| application/  vnd.oasis.opendocument.graphics-template | otg | Drawing document used as template |
| application/vnd.oasis.opendocument.presentation | odp | Presentation document |
| application/  vnd.oasis.opendocument.presentation-template | otp | Presentation document used as template |
| application/vnd.oasis.opendocument.spreadsheet | ods | Spreadsheet document |
| application/  vnd.oasis.opendocument.spreadsheet-template | ots | Spreadsheet document used as template |
| application/vnd.oasis.opendocument.chart | odc | Chart document |
| application/  vnd.oasis.opendocument.chart-template | otc | Chart document used as template |
| application/vnd.oasis.opendocument.image | odi | Image document |
| application/  vnd.oasis.opendocument.image-template | oti | Image document used as template |
| application/vnd.oasis.opendocument.formula | odf | Formula document |
| application/  vnd.oasis.opendocument.formula-template | otf | Formula document used as template |
| application/vnd.oasis.opendocument.text-master | odm | Global Text document (see section 2.3.1) |
| application/vnd.oasis.opendocument.text-web | oth | Text document used as template for HTML documents |

1. Core Features Sets (Non Normative)

The OpenDocument specification does not specify which elements and attributes conforming application must, should, or may support. The intention behind this is to ensure that the OpenDocument specification can be used by as many implementations as possible, even if these applications do not support some or many of the elements and attributes defined in this specification. Viewer applications for instance may not support all editing relates elements and attributes (like change tracking), other application may support only the content related elements and attributes, but none of the style related ones.

Even typical office applications may only support a subset of the elements and attributes defined in this specification. They may for instance not support lists within text boxes or may not support some of the language related element and attributes.

The follow table provides an overview which element and attributes usually are supported by typical office application. It lists the chapters and sections contained in this specification and some typical office application classes. An “X” in this table indicates that most (or at least a significant number) of the elements and attributes defined in a section usually are supported by a certain application classes. An “(X)” indicates that only a limited number of elements and attributes usually is supported.

| Sect- ion. | Title | Text | Spread- sheet | Draw- ing | Presen- tation | Chart | Image |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 2.2 | Document Metadata | X | X | X | X | X | X |
| 2.3 | Body Element and Document Types | X | X | X | X | X | X |
| 2.4 | Application Settings | X | X | X | X | X | X |
| 2.5 | Scripts | X | X | X | X | X | X |
| 2.6 | Font Face Declarations | X | X | X | X | X |  |
| 2.7 | Styles | X | X | X | X | X | X |
| 2.8 | Page Styles and Layout | X | X | X | X |  |  |
| 3 | Metadata Elements | X | X | X | X | X | X |
| 4.1 | Paragraphs and Basic Text Structure | X | X(1) | X(2) | X(2) | X(3) |  |
| 4.1 | Headings | X |  |  |  |  |  |
| 4.2 | Page Sequences | X |  |  |  |  |  |
| 4.3 | Lists | X |  | X(2) | X(2) |  |  |
| 4.4 | Text Sections | X |  |  |  |  |  |
| 4.5 | Page-bound graphical content | X |  |  |  |  |  |
| 4.6 | Text Change Tracking | X |  |  |  |  |  |
| 4.7 | Text Declarations | X | (X) | (X) | (X) | (X) |  |
| 5.1 | Basic Text Content | X | X(1) | X(2) | X(2) | X(3) |  |
| 5.2 | Bookmarks and References | X |  |  |  |  |  |
| 5.3 | Notes | X |  |  |  |  |  |
| 5.4 | Ruby | X |  |  |  |  |  |
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| 5.8 | Inline graphics and text-boxes | X |  |  |  |  |  |
| 6 | Text Fields | X | (X) | (X) | (X) |  |  |
| 7 | Text Indices | X |  |  |  |  |  |
| 8.1 | Basic Table Model | X | X |  |  |  |  |
| 8.2 | Advanced Table Model | X | X |  |  |  |  |
| 8.3 | Advanced Tables |  | X |  |  |  |  |
| 8.4 | Advanced Table Cells |  | X |  |  |  |  |
| 8.5 | Spreadsheet Document Content |  | X |  |  |  |  |
| 8.6 | Database Ranges |  | X |  |  |  |  |
| 8.7 | Filters |  | X |  |  |  |  |
| 8.8 | Data Pilot Tables |  | X |  |  |  |  |
| 8.9 | Consolidation |  | X |  |  |  |  |
| 8.10 | Table DDE Links |  | X |  |  |  |  |
| 8.11 | Change Tracking in Spreadsheets |  | X |  |  |  |  |
| 9.1 | Enhanced Page Features for Graphical Applications |  |  | X | X |  |  |
| 9.2 | Drawing Shapes | X | X | X | X |  |  |
| 9.3 | Frames | X | X | X | X |  | X(4) |
| 9.4 | 3D Shapes | X | X | X | X |  |  |
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| 9.7 | Presentation Animations |  |  |  | X |  |  |
| 9.8 | SMIL Presentation Animations |  |  |  | X |  |  |
| 9.9 | Presentation Events |  |  |  | X |  |  |
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| 9.11 | Presentation Document Content |  |  |  | X |  |  |
| 10 | Chart Content |  |  |  |  | X |  |
| 11 | Form Content | X | X | X | X |  |  |
| 12.1 | Annotation | X(5) | X(1) |  |  |  |  |
| 12.2 | Number Format for page numbers, etc. | X | X | X | X |  |  |
| 12.3 | Change Tracking Metadata | X | X |  |  |  |  |
| 12.4 | Event Listener Tables | X | X | X | X |  |  |
| 12.5 | Mathematical Content | X | X | X | X |  |  |
| 12.6 | DDE Connections | X | X |  |  |  |  |
| 13 | SMIL Animations |  |  |  | X |  |  |
| 14.1 | Style Element | X | X | X | X | X | X |
| 14.2 | Default Styles | X | X | X | X | X | X |
| 14.3 | Page Layout | X | X | X | X |  |  |
| 14.4 | Master Pages | X | X | X | X |  |  |
| 14.5 | Table Templates | X | X |  |  |  |  |
| 14.6 | Font Face Declaration | X | X | X | X | X |  |
| 14.7 | Data Styles | X | X | X | X | X |  |
| 14.8 | Text Styles | X | X(6) | X(6) | X(6) | X(6) |  |
| 14.9 | Enhanced Text Styles | X |  |  |  |  |  |
| 14.10 | List Style | X |  | X | X |  |  |
| 14.11 | Outline Style | X |  |  |  |  |  |
| 14.12 | Table Styles | X | X |  |  |  |  |
| 14.13 | Graphic Styles | X | X | X | X |  |  |
| 14.14 | Enhanced Graphic Style Elements | X | X | X | X | X |  |
| 14.15 | Presentation Page Layouts |  |  |  | X |  |  |
| 14.16 | Chart Styles |  |  |  |  | X |  |
| 15.2 | Page Layout Formatting Properties | X | X | X | X |  |  |
| 15.3 | Header Footer Formatting Properties | X | (X) |  |  |  |  |
| 15.4 | Text Formatting Properties | X | X | X | X | X |  |
| 15.5 | Paragraph Formatting Properties | X | X | X | X | X |  |
| 15.6 | Ruby Text Formatting Properties | X |  |  |  |  |  |
| 15.7 | Section Formatting Properties | X |  |  |  |  |  |
| 15.8 | Table Formatting Properties | (X) | X |  |  |  |  |
| 15.9 | Column Formatting Properties | (X) | X |  |  |  |  |
| 15.10 | Table Row Formatting Properties | (X) | X |  |  |  |  |
| 15.11 | Table Cell Formatting Properties | (X) | X |  |  |  |  |
| 15.12 | List-Level Style Properties | X |  | X | X |  |  |
| 15.13 | Stroke Properties | X(7) | X(7) | X | X | X |  |
| 15.14 | Fill Properties | X(7) | X(7) | X | X | X |  |
| 15.15 | Text Animation Properties | X(7) | X(7) | X | X |  |  |
| 15.16 | Text Alignment Properties | X(7) | X(7) | X | X |  |  |
| 15.17 | Color Properties | X(7) | X(7) | X | X |  | X |
| 15.18 | Shadow Properties | X(7) | X(7) | X | X |  |  |
| 15.19 | Connector Properties | X(7) | X(7) | X | X |  |  |
| 15.20 | Measure Properties | X(7) | X(7) | X | X |  |  |
| 15.21 | Caption Properties | X(7) | X(7) | X | X |  |  |
| 15.22 | 3D Geometry Properties | X(7) | X(7) | X | X | X |  |
| 15.23 | 3D Lighting Properties | X(7) | X(7) | X | X | X |  |
| 15.24 | 3D Texture Properties | X(7) | X(7) | X | X | X |  |
| 15.25 | 3D Material Properties | X(7) | X(7) | X | X | X |  |
| 15.26 | 3D Shadow Properties | X(7) | X(7) | X | X | X |  |
| 15.27 | Frame Formatting Properties | X | (X) | (X) | (X) | (X) |  |
| 15.28 | Floating Frame Formatting Properties | X | X | X | X |  |  |
| 15.29 | Chart Formatting Properties |  |  |  |  | X |  |
| 15.30 | Chart Subtype Properties |  |  |  |  | X |  |
| 15.31 | Chart Axes Properties |  |  |  |  | X |  |
| 15.32 | Common Chart Properties |  |  |  |  | X |  |
| 15.33 | Statistical Properties |  |  |  |  | X |  |
| 15.34 | Plot Area Properties |  |  |  |  | X |  |
| 15.35 | Regression Curve Properties |  |  |  |  | X |  |
| 15.36 | Presentation Page Attributes |  |  |  | X |  |  |

within table cells

within text boxes

within some chart objects

only frames that contain images

within text

only automatic styles

only for drawing shapes

1. Accessibility Guidelines (Non Normative)
   1. Title, Description and Caption of Graphical Elements

User agents supporting platform accessibility APIs should follow the following conventions for supporting the accessible name, accessible description (accessible help on some systems), and caption-id relationships (see sections 9.2.20 and 9.2.15: for a description of these elements and attributes):

If an <svg:title> element is provided it should map to the accessible name. If not, the name should use the text referenced by the draw:caption-id attribute. The <svg:desc> element must be used to support the accessible description. User agents shall not manufacture names for the <svg:title> element, such as using the drawing object name followed by a cardinal number in a string as it is used for accessibility. Name assignments such as these provide no semantic meaning to the user.

When transforming from another document format to OpenDocument the short names, like HTML's alt text on the <img> elements shall be mapped to the <svg:title> element.

If the user agent supports a platform which provides a draw:caption-id relationship in its accessibility API, this relationship for captions should be used to fulfill the relationship.

Guidance for authors:

Authors should not assign names to objects having no semantic value. If no name is assigned the caption text will be used in its place.<svg:title> elements shall take precedence over the caption text for accessible name assignment by the user agent.

Assignment of the long description should only be necessary when a drawing object is significantly complex and the user needs more information to describe it. Long descriptions would be more applicable to drawing groupings than basic drawing shapes.

Authoring tool responsibility for presenting and prompting for the <svg:title> and <svg:desc> elements:

Authoring tools should provide an option from an objects context menu to allow the user to enter the text for either of these elements as a minimum. More proactive authoring tools should have a facility for prompting the author for this text. Since the <svg:desc> element is a long description, a text area vs. a text field should be used to prompt the user accordingly in GUI-based authoring tools like office applications.

Navigation tools used to list the objects in the view should provide the type of object followed by the contents of <svg:title> element. The title must have been entered by the author.

For <draw:g> elements the drawing objects which are members of the group should visible only when the group is expanded.

* 1. Hyperlink Titles

When transforming from another document format to OpenDocument the alt text of hyperlinks, shall be mapped to the office:title attribute of <text:a> elements (see section 5.1.4) or <draw:a> elements (see section 9.3.9). When exporting OpenDocument documents to HTML, the contents of title text should be mapped to title attribute text on HTML anchor tags. As a minimum, authoring tools should provide a mechanism to provide the hint text.

The title text should be made accessible to the assistive technology and user. The user agent should allow for programmatic access through standard accessibility APIs such as the accessible description. Users should experience visible access to the hint text via the keyboard or mouse.

* 1. Tables in Presentations

Users importing non-OpenDocument slides that contain tables need access to the table structure via their assistive technology. Therefore tables imported into an OpenDocument application from another file format must have their structure preserved, and when saved as OpenDocument should be saved as as embedded spreadsheets.

* 1. Further Guidelines

Please see the additional, detailed Accessibility Guidelines <http://docs.oasis-open.org/office/office-accessibility/guidelines>. That more comprehensive document will be the up-to-date set of recommendations for what all OpenDocument applications should do in order to fully support accessibility.

1. Bidirectional (BiDi) Scripts,Numeric Digits Presentation and Calendars (Non Normative)

This appendix describes how bidirectional (BiDi) scripts and related information are represented in OpenDocument.

Paragraph and Layout Direction

In OpenDocument, the direction of text runs inside a paragraph is calculated using the Unicode BiDi Algorithm (see [UAX9]). The paragraph direction, as required by the BiDi Algorithm (see BD5 of [UAX9]), and the display direction of layout objects like table or page columns (in the following called layout direction) is controlled by a writing mode attribute (style:writing-mode) that can be used within styles.

The writing mode attribute can be applied individually to paragraph styles, page styles, section styles, table styles and graphic styles. If present within a paragraph style, it controls the paragraph direction of those paragraphs, to which the style is applied. If present within a page style, section style, table style or graphic style, it controls the layout direction of those pages, text sections, tables and text-boxes to which the styles is applied.

Section 15.2.19 describes the style:writing-mode attribute for page styles. It may, among other values, take the the values lr-tb (left-to-right, top-to-bottom) and rl-tb (right-to-left, top-to-bottom). The writing-mode attribute of a page style specifies the layout direction of page columns (left-to-right or right-to-left) for pages that are formatted using the page style.

Section 15.5.36 describes the style:writing-mode attribute for paragraph styles. It specifies the paragraph direction as defined in BD5 of [UAX9] for all paragraphs that have the paragraph style assigned. For paragraphs that are contained in lists, it further specifies whether the list numbers and bullets are displayed on the left or on the right of the paragraph.

The writing mode attribute for paragraph styles takes the same values as the writing mode attribute for page styles, but may also take the value page. This value specifies that the paragraph direction is inherited from the layout direction of the closest layout object (section, table or text-box) in which the paragraph is contained, and which has a layout direction other than page. If the paragraph is not contained in any of these layout objects, the paragraph direction is inherited from the page on which the paragraph appears.

The paragraph direction determines the default bidirectional orientation of the text in that paragraph. The result of the BiDi Algorithm can be manually changed by inserting BiDi embedding control characters (U+202A ... U+202E) and implicit directional marks (U+200E ...U+200F) into the text (see [UTR20]).

OpenDocument further has a style:automatic-writing-mode attributes (described in section 15.5.37) that specifies that an application is allowed to recalculate the value of the paragraph's writing-mode attribute based on its content whenever the content changes.

Section 15.7.8 describes the style:writing-mode attribute for section styles. It may take the same values as the writing mode attribute for paragraph styles.

The writing-mode attribute of a section style specifies the layout direction of section columns (left-to-right or right-to-left) for text sections that have the section style assigned. If the attribute's value is page, then the layout direction is inherited from the layout direction of the closest layout object (section, table or text-box) in which the section is contained, and which has a layout direction other than page.

Section 15.8.13 describes the style:writing-mode attribute for table styles. It may take the same values as the writing mode attribute for paragraph styles.

The writing-mode attribute of a table style specifies the layout direction of table cells (left-to-right or right-to-left) for tables that have the table style assigned. If the attribute's value is page, then the layout direction is inherited from the layout direction of the closest layout object (section, table or text-box) in which the table is contained, and which has a layout direction other than page.

Section 14.13.1 describes the style:writing-mode attribute for graphic styles. It may take the same values as the writing mode attribute for paragraph styles.

The writing-mode attribute of a graphic style specifies the layout direction of columns (left-to-right or right-to-left) for text-boxes that have the graphic style assigned. If the attribute's value is page, then the layout direction for text-boxes that are anchored to a page is inherited from the layout direction of the page on which the text-box is displayed. For text-boxes that have a different anchor type, the layout direction is inherited from the paragraph direction of the paragraph that contains the text-box.

Numeric Digits Presentation and Calendars

All digits that have a Unicode code point can be included in an OpenDocument document.

Note: Some office application have a feature that allows the user to specify whether the ASCII digits U+0030 ... U+0039 should be displayed as Arabic digits or as Indic digits (U+0660 ... U+0669). Since this feature effects only what digits are displayed and does not influence the representation of digits in the document itself, OpenDocument only allows storing this setting as an application specific setting, not as document or style content.

For list numbers, that are calculated automatically, OpenDocument provides a generic mechanism to specify the applicable numbering formats (see section 12.2.2).

Note: The specification currently mentions only "1, 2, 3...", "I, II, III...", and "i, ii, iii" explicitly, but the schema also allows a generic string here.

OpenDocument further supports data styles, which describe how different types of data are displayed, for example, a number or a date. Data styles are described in section 14.7. The presentation of numeric digits can be controlled by the transliteration attributes described in section 14.7.10. The presentation of date information can be controlled by the number:calendar attribute specified in section 14.7.11.

1. Changes From Previous Specification Versions (Non Normative)
   1. Changes from “Open Office Specification 1.0 Committee Draft 1”

The following are the changes since the “Open Office Specification 1.0 Committee Draft 1”:

* The name of this specification has been changed to “Open Document Format for Office Applications (OpenDocument) 1.0”.
* The namespace URIs (section 1.3) have been adapted to the new specification name.
* The MIME type recommendations have been moved into a non normative appendix (appendix C) and have been adapted to the new specification name.
* Various new definitions have been added. Among them are:
  + Custom Shapes (section 9.5)
  + SMIL Animations (section 9.8 and chapter 13)
  + Support for XForms (section 11.2)
* Various errors in the schema and descriptions have been corrected.
* Some descriptions have been rewritten for easier understanding.
  1. Changes from “Open Document Format for Office Applications (OpenDocument) 1.0 Committee Draft 2”

The following are the changes since the “Open Document Format for Office Applications (OpenDocument) 1.0 Committee Draft 2”:

* Namespaces for compatible elements and attributes have been added as follows:
  + urn:oasis:names:tc:opendocument:xmlns:xsl-fo-compatible:1.0 for attributes that are compatible with [XSL];
  + urn:oasis:names:tc:opendocument:xmlns:svg-compatible:1.0 for elements and attributes that are compatible with [SVG];
  + urn:oasis:names:tc:opendocument:xmlns:smil-compatible:1.0 for attributes that are compatible with [SMIL20].
* The following namespaces are not imported any longer:
  + http://www.w3.org/1999/XSL/Format
  + http://www.w3.org/2000/svg
  + http://www.w3.org/2001/SMIL20/
* The attribute xforms:submission specified in section 11.3.11 has been renamed to form:xforms-submission.
* Information for Custom Shapes (section 9.5), SMIL Animations (sections 9.8 and chapter 13) and Presentation Text Fields (section 9.10) has been added to the core feature set table in appendix D; the chapter numbers in the table have been updated.
  1. Changes from “Open Document Format for Office Applications (OpenDocument) v1.0”

The following are the changes between the “Open Document Format for Office Applications (OpenDocument) v1.0” specification and the “Open Document Format for Office Applications (OpenDocument) v1.0 (Second Edition)” specification.

* The usage of key words for “shall”, “may”, etc. conforms now to Annex H of the ISO directives.
* Various ambiguous references were replaced with explicit references to chapter and section numbers.
* Various spelling and grammatical errors were corrected.
* All occurrences of "unicode" and "UNICODE" were replaced with the bibliographic reference “[UNICODE]”. A bibliographic entry for Unicode was added to appendix B.
* All occurrences of the term URI, with the exception of one in appendix E.1, were replaced with the term IRI, because the W3C Schema "anyURI" datatype that is used in the OpenDocument schema actually takes IRIs rather than URIs. References to [RFC2396]) were replaced with references to [RFC3987]. In appendix B, the bibliographic entry for RFC2396 was replaced with one for RFC3987.
* A reference to the RELAX NG DTD Compatibility specification was added to the second paragraph of section 1.4. A bibliography entry for the RELAX NG DTD Compatibility specification was added to appendix B.
* References to [RFC2045] were added to some usages of the term “BASE64”, and occurrences of “base64” were corrected to “BASE64”. A bibliography entry for RFC2045 has been added to appendix B.
* The description of the draw:z-index attribute in section 9.2.5 was corrected.
* The references to the W3C CSS3 Text Module were clarified. In appendix B, the URL “http://www.w3.org/TR/2003/CR-css3-text-20030514” was added to the bibliographic entry for CSS3Text.
* In appendix B, the bibliographic entry for [RNG] now references to the ISO Relax-NG specification document rather than the OASIS Relax-NG specification document.
* In appendix B, the bibliographic entry for ZIP was updated.
* The contributor list was moved from the title page into an appendix.
  1. Changes from “Open Document Format for Office Applications (OpenDocument) v1.0 (Second Edition)”

The following are the changes between the “Open Document Format for Office Applications

The following are the changes between the “Open Document Format for Office Applications (OpenDocument) v1.0 (Second Edition)” specification and the “Open Document Format for Office Applications (OpenDocument) v1.1” specification.

* The accessibility support of OpenDocument was improved by the following changes:
  + Soft Page Breaks were added.
  + The usage of table header and row columns was clarified (sections 8.2.2 and 8.2.4).
  + A logical navigation order for presentation slides was added (section 9.1.4).
  + Alternative texts for graphical objects, image maps, drawing layers and hyperlinks were added (sections 9.2.20, 9.3.9 and 5.1.4).
  + An attribute to establish a relationship between graphical objects and captions was added (section 9.2.15).
  + An appendix E containing accessibility guidelines was added.
* The use of DDE and OLE was clarified (section 12.6).
* The measure units supported by attribute values of type “length” was clarified (chapter 16).
* The definition of the “positiveLength” data type was improved (chapter 16).
* The recommendations for event names to be used in event listener definitions was clarified (sections 11.6 and 12.4.1).
* A style:writing-mode attribute was added for graphic styles (section 15.27.32).
* An appendix F containing information on bidirectional (BiDi) scripts, numeric digits presentation and calendars was added.
* The following errors in the schema were corrected:
  + Section 8.5.2:: The attribute “table:date-value" was misspelled “table:date-value-type”.
  + Section 9.2.19:: An “<optional>” element was missing.
  + Section 13.1: For the elements described in this section, the schema referenced “common-fill-timing-attlist” instead of “common-timing-attlist”.
  + Section 13.4.1:: The value “indefinite” was missing for the “smil:repeatCount” attribute, and an “<optional/><optional>” pair was missing between the attribute definitions of “smil:repeatCount” and “smil:repeatDur”.
  + Section 13.4.3: The element content for “<anim:seq>” was missing.
  + Section 13.4.4: The define “anim-iterate-attlist” was misspelled “anin-iterate-attlist”.
  + Section 13.4.4:: Instead of referencing “common-anim-target-attlist”, the schema defined a subset of the defined attributes itself.
  + Section 14.4.1: A reference to “text-decls” was missing in the definition of “header-footer-content”.
  + Section 14.4.2: A reference to “office-forms” was missing in the definition of “presentation-notes”.
  + Section 14.6.1: The name attribute was missing the svg: namespace prefix.
  + Section 14.9.1:: The attribute value “right” was misspelled “rigth”.
  + Section 15.3.8: The definition was named “style-header-footer-attlist” instead of “style-header-footer-properties-attlist”.
  + Section 15.4.18: The schema for the "style:font-charset-asian" and "style:font-charset-complex" attributes was missing.
  + Section 15.5.35: The value "baseline" was missing.
  + Section 15.24.2:: The attribute value “intensity” was misspelled “intesity”.
  + Section 15.27.22:: The attribute “draw:dynamic-wrap-threshold” was misspelled “draw:dynamic-wrap-treshold”.
  + Section 15.31.3: The attribute “chart:interval-minor-divisor” was misspelled “chart:interval-minor”.
  + Section 15.36.7: The attribute value type of "smil:fadeColor" was not "color".
  + Appendix A: The "style-chart-properties-content" define referenced "style-properties-content" instead of "style-chart-properties-content-strict".
* The referenced version of xmlschema part 2 has been updated to xmlschema part 2 second edition.
* The text and schema in section 8.3.1: the text and schema was extended to allow for apostrophe characters in table names by escaping them through doubling in quoted names.
* In section 15.5.39, and “auto”-value has been added to the style:page-number attribute.
* In section 14.5.1:Row and Column Styles, the text:paragraph-style-name attribute was added.
* The presentation:show-end-of-presentation-slide attribute has been added to section 9.11.5:.
* The example for addressing of sub-table cells has be clarified in section 8.2.6:.
* The descriptive text in section 4.6.4 was clarified and some examples were corrected.
* The example in section 4.3.2 was corrected.
* In section 17.5, the restrictions that exist for IRIs that are used within a packages were clarified.
* The descriptive texts in sections 8.1.2: and 8.2.1: were clarified.
* In the description of the example in section 15.5.35, "middle" was referred to as "center".
* The descriptive texts of sections 15.10 and 15.10.4 were corrected to refer to rows rather than columns.
* The white-space processing in section 5.1.1 was clarified.
* Various spelling errors were corrected.

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