# WordprocessingML Reference Material

## Main Document Story

As defined in §4, a WordprocessingML document contains the markup for a rendition of an Office Open XML document of category Wordprocessing. Syntactically, the document consists of a compilation of two kinds of information, which are combined to create this rendition:

### background (Document Background)

This element specifies the background for every page of the document containing the background element. A document's *background* is the image or fill for the entire page surface, behind all other document content.

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| Attributes | Description |
| color (Background Color) | Specifies the color for the background of the document. |
| themeColor (Background Theme Color) | Specifies the base theme color used to generate the background color. The background color is the RGB value associated with themeColor as further transformed by themeTint or themeShade (if one is present), else the background color is the RGB value associated with themeColor. |
| themeShade (Background Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this background. If the themeColor attribute is not specified, this attribute shall not be specified. |
| themeTint (Background Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this background. If the themeColor attribute is not specified, this attribute shall not be specified. |

### body (Document Body)

This element specifies the contents of the body of the document - the main document editing surface.

### document (Document)

This element specifies the contents of a main document part in a WordprocessingML document.

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| **Attributes** | **Description** |
| conformance (Document Conformance Class) | Specifies the conformance class (§2.1) to which the WordprocessingML document conforms. |

## Paragraphs and Rich Formatting

The basis of a WordprocessingML document is its actual text contents. Those text contents can be stored in many contexts (tables, text boxes, etc.), but the most basic form of text contents in WordprocessingML is the paragraph, specified using the p element (§17.3.1.22).

### Paragraphs

The most basic unit of block-level content within a WordprocessingML document, *paragraphs* are stored using the p element (§17.3.1.22). A paragraph defines a distinct division of content with a WordprocessingML document which begins on a new line.

#### adjustRightInd (Automatically Adjust Right Indent When Using Document Grid)

This element specifies whether the right indent shall be automatically adjusted for the given paragraph when a document grid has been defined for the current section using the docGrid element (§17.6.5), modifying of the current right indent used on this paragraph.

#### autoSpaceDE (Automatically Adjust Spacing of Latin and East Asian Text)

This element specifies whether inter-character spacing shall automatically be adjusted between regions of Latin text and regions of East Asian text in the current paragraph. These regions shall be determined by the Unicode character values of the text content within the paragraph.

#### autoSpaceDN (Automatically Adjust Spacing of East Asian Text and Numbers)

This element specifies whether inter-character spacing shall automatically be adjusted between regions of numbers and regions of East Asian text in the current paragraph. These regions shall be determined by the Unicode character values of the text content within the paragraph.

#### bar (Paragraph Border Between Facing Pages)

This element specifies the border which can be displayed on the inside edge of the paragraph when the parent's section settings specify that the section shall be printed using mirrored margins using the mirrorMargins element (§17.15.1.57). [*Note*: This information is present in the WordprocessingML for the purposes of legacy document format compatibility, and it can be removed and/or ignored as required. *end note*]

#### between (Paragraph Border Between Identical Paragraphs)

This element specifies the border which shall be displayed between each paragraph in a set of paragraphs which have the same set of paragraph border settings.

#### bidi (Right to Left Paragraph Layout)

This element specifies that this paragraph shall be displayed from right to left. This property only affects the following set of paragraph-level properties:

#### bottom (Paragraph Border Below Identical Paragraphs)

This element specifies the border which shall be displayed below a set of paragraphs which have the same paragraph border settings.

#### cnfStyle (Paragraph Conditional Formatting)

This element specifies the set of conditional table style formatting properties which have been applied to this paragraph, if this paragraph is contained within a table cell. [*Note*: This property is an optimization which can be used by consumers to determine if a given property on a paragraph is the result of the table style properties vs. direct formatting on the paragraph itself. *end note*]

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| **Attributes** | **Description** |
| evenHBand (Even Numbered Horizontal Band) | Specifies that the object has inherited the conditional properties applied to the even numbered horizontal bands of the parent object. |
| evenVBand (Even Numbered Vertical Band) | Specifies that the object has inherited the conditional properties applied to the even numbered vertical bands of the parent object. |
| firstColumn (First Column) | Specifies that the object has inherited the conditional properties applied to the first column of the parent object. |
| firstRow (First Row) | Specifies that the object has inherited the conditional properties applied to the first row of the parent object. |
| firstRowFirstColumn (First Row and First Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the first row and first column of the parent object. |
| firstRowLastColumn (First Row and Last Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the first row and last column of the parent object. |
| lastColumn (Last Column) | Specifies that the object has inherited the conditional properties applied to the last column of the parent object. |
| lastRow (Last Row) | Specifies that the object has inherited the conditional properties applied to the last row of the parent object. |
| lastRowFirstColumn (Last Row and First Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the last row and first column of the parent object. |
| lastRowLastColumn (Last Row and Last Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the last row and last column of the parent object. |
| oddHBand (Odd Numbered Horizontal Band) | Specifies that the object has inherited the conditional properties applied to the odd numbered horizontal bands of the parent object. |
| oddVBand (Odd Numbered Vertical Band) | Specifies that the object has inherited the conditional properties applied to the odd numbered vertical bands of the parent object. |

#### contextualSpacing (Ignore Spacing Above and Below When Using Identical Styles)

This element specifies that any space specified before or after this paragraph, specified using the spacing element (§17.3.1.33), should not be applied when the preceding and following paragraphs are of the same paragraph style, affecting the top and bottom spacing respectively. [*Example*: This value is typically used for paragraphs in lists, in which any space between subsequent list items, even if inherited from another style, is not desirable. *end example*]

#### divId (Associated HTML div ID)

This element specifies that this paragraph should be located within the specified HTML div tag when this document is saved in HTML format. This ID is then used to look up the associated div stored in the divs (§17.15.2.8) element. [*Note*: This element is used to preserve the fidelity of existing HTML documents when saved in the WordprocessingML format. *end note*].

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| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contain a decimal number. |

#### framePr (Text Frame Properties)

This element specifies information about the current paragraph with regard to *text frames*. *Text frames* are paragraphs of text in a document which are positioned in a separate region or frame in the document and can be positioned with a specific size and position relative to non-frame paragraphs in the current document.

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| **Attributes** | **Description** |
| anchorLock (Lock Frame Anchor to Paragraph) | Specifies that the frame shall always remain in the same logical position relative to the non-frame paragraphs which precede and follow it in this document. |
| dropCap (Drop Cap Frame) | Specifies that the current frame contains a drop cap to be located at the beginning of the next non-frame paragraph in the document. Its contents shall be used to specify how that drop cap should be positioned relative to that paragraph. |
| h (Frame Height) | Specifies the frame's height. |
| hAnchor (Frame Horizontal Positioning Base) | Specifies the base object from which the horizontal positioning in the x attribute should be calculated. |
| hRule (Frame Height Type) | Specifies the meaning of the height specified for this frame. |
| hSpace (Horizontal Frame Padding) | Specifies the minimum distance which shall be maintained between the current text frame and any non-frame text which has been allowed to flow around this object when the wrap attribute on this text frame is set to around. |
| lines (Drop Cap Vertical Height in Lines) | Specifies the number of lines in the non-frame paragraph to which this text frame is anchored which should be used to calculate the drop cap's height. |
| vAnchor (Frame Vertical Positioning Base) | Specifies the base object from which the horizontal positioning in the y attribute should be calculated. |
| vSpace (Vertical Frame Padding) | Specifies the minimum distance which shall be maintained between the current text frame and any non-frame text which is above or below this text frame. |
| w (Frame Width) | Specifies the exact value for this text frame's width. |
| wrap (Text Wrapping Around Frame) | Specifies the style of text wrapping which should be allowed around the contents of this text frame. This attribute determines if non-frame text shall be allowed to flow around the contents of this frame. |
| x (Absolute Horizontal Position) | Specifies an absolute horizontal position for the text frame. This absolute position is specified relative to the horizontal anchor specified by the hAnchor attribute for this text frame. |
| xAlign (Relative Horizontal Position) | Specifies a relative horizontal position for the text frame. This relative position is specified relative to the horizontal anchor specified by the hAnchor attribute for this text frame. |
| y (Absolute Vertical Position) | Specifies an absolute vertical position for the text frame. This absolute position is specified relative to the vertical anchor specified by the vAnchor attribute for this text frame. |
| yAlign (Relative Vertical Position) | Specifies a relative vertical position for the text frame. This relative position is specified relative to the vertical anchor specified by the vAnchor attribute for this text frame. |

#### ind (Paragraph Indentation)

This element specifies the set of indentation properties applied to the current paragraph.

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| **Attributes** | **Description** |
| end (End Indentation) | Specifies the indentation which shall be placed at the end of this paragraph – between the right text margin for this paragraph and the right edge of that paragraph's content in a left to right paragraph, and the left text margin and the left edge of that paragraph's text in a right to left paragraph. If the mirrorIndents property (§17.3.1.18) is specified for this paragraph, then this indent is used for the outside page edge - the left page edge for odd numbered pages and the right page edge for even numbered pages. |
| endChars (End Indentation in Character Units) | Specifies the indentation which shall be placed at the end of this paragraph – between the right text margin for this paragraph and the right edge of that paragraph's content in a left to right paragraph, and the left text margin and the left edge of that paragraph's text in a right to left paragraph. If the mirrorIndents property (§17.3.1.18) is specified for this paragraph, then this indent is used for the outside page edge - the left page edge for odd numbered pages and the right page edge for even numbered pages. |
| firstLine (Additional First Line Indentation) | Specifies the additional indentation which shall be applied to the first line of the parent paragraph. This additional indentation is specified relative to the paragraph indentation which is specified for all other lines in the parent paragraph. |
| firstLineChars (Additional First Line Indentation in Character Units) | Specifies the additional indentation which shall be applied to the first line of the parent paragraph. This additional indentation is specified relative to the paragraph indentation which is specified for all other lines in the parent paragraph. |
| hanging (Indentation Removed from First Line) | Specifies the indentation which shall be removed from the first line of the parent paragraph, by moving the indentation on the first line back towards the beginning of the direction of text flow. |
| hangingChars (Indentation Removed From First Line in Character Units) | Specifies the indentation which shall be removed from the first line of the parent paragraph, by moving the indentation on the first line back towards the beginning of the direction of text flow. |
| start (Start Indentation) | Specifies the indentation which shall be placed at the start of this paragraph – between the left text margin for this paragraph and the left edge of that paragraph's content in a left to right paragraph, and the right text margin and the right edge of that paragraph's text in a right to left paragraph. If the mirrorIndents property (§17.3.1.18) is specified for this paragraph, then this indent is used for the inside page edge - the right page edge for odd numbered pages and the left page edge for even numbered pages. |
| startChars (Start Indentation in Character Units) | Specifies the indentation which shall be placed at the start of this paragraph – between the left text margin for this paragraph and the left edge of that paragraph's content in a left to right paragraph, and the right text margin and the right edge of that paragraph's text in a right to left paragraph. If the mirrorIndents property (§17.3.1.18) is specified for this paragraph, then this indent is used for the inside page edge - the right page edge for odd numbered pages and the left page edge for even numbered pages. |

#### jc (Paragraph Alignment)

This element specifies the paragraph alignment which shall be applied to text in this paragraph.

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| **Attributes** | **Description** |
| val (Alignment Type) | Specifies the justification which should be applied to the parent object within a document. |

#### keepLines (Keep All Lines On One Page)

This element specifies that all lines of this paragraph should be maintained on a single page whenever possible.

#### keepNext (Keep Paragraph With Next Paragraph)

This element specifies that the contents of this paragraph are at least partly rendered on the same page as the following paragraph whenever possible.

#### kinsoku (Use East Asian Typography Rules for First and Last Character per Line)

This element specifies whether East Asian typography and line-breaking rules shall be applied to text in this paragraph to determine which characters can begin and end each line. This property only applies to Simplified Chinese, Traditional Chinese, and Japanese text in this paragraph.

#### left (Left Paragraph Border)

This element specifies the border which shall be displayed on the left side of the page around the specified paragraph. This shall not change based on the paragraph direction.

#### mirrorIndents (Use Left/Right Indents as Inside/Outside Indents)

This element specifies whether the paragraph indents should be interpreted as mirrored indents. When this element is present, the start indent shall become the inside indent (the one closest to the binding) and the end indent shall become the outside indent (the one furthest from the binding). [*Note*: This mirroring is typically used when the contents of the document are used to generate *signatures* – combinations of pages which are then placed in a binding. When signatures are printed in a left-to-right document, the first, third, etc. pages are printed on the left side of the combined sheet, and the second, fourth, etc. are printed on its right side, then bound and folded. For a right-to-left document, the first, third, etc. pages are printed on the right side of the combined sheet, and the second, fourth, etc. are printed on its left side. *end note*]

#### numPr (Numbering Definition Instance Reference)

This element specifies that the current paragraph uses numbering information that is defined by a particular *numbering definition instance*.

#### outlineLvl (Associated Outline Level)

This element specifies the *outline level* which shall be associated with the current paragraph in the document. The *outline level* specifies an integer which defines the level of the associated text. This level shall not affect the appearance of the text in the document but shall be used to calculate the TOC field (§17.16.5.68) if the appropriate field switches have been set, and can be used by consumers to provide additional application behavior.

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| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contains a decimal number. |

#### overflowPunct (Allow Punctuation to Extend Past Text Extents)

This element specifies that the text in this paragraph shall be allowed to extend one character beyond the extents applied by any indents/margins when the character that extends past those extents is a punctuation character.

#### p (Paragraph)

This element specifies a paragraph of content in the document.

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| **Attributes** | **Description** |
| rsidDel (Revision Identifier for Paragraph Deletion) | Specifies an identifier used to track the editing session when the paragraph was deleted from the main document. |
| rsidP (Revision Identifier for Paragraph Properties) | This attribute specifies an identifier used to track the editing session when the paragraph's properties were last modified in this document. |
| rsidR (Revision Identifier for Paragraph) | This attribute specifies an identifier used to track the editing session when the paragraph was added to the main document. |
| rsidRDefault (Default Revision Identifier for Runs) | This attribute specifies an identifier used for all runs in this paragraph which do not explicitly declare an rsidR attribute. This attribute allows consumers to optimize the locations where rsid\* values are written in this document. |
| rsidRPr (Revision Identifier for Paragraph Glyph Formatting) | This attribute specifies an identifier used to track the editing session when the glyph character representing the paragraph mark was last modified in the main document. |

#### pageBreakBefore (Start Paragraph on Next Page)

This element specifies that the contents of this paragraph are rendered on the start of a new page.

#### pBdr (Paragraph Borders)

This element specifies the borders for the parent paragraph. Each child element shall specify a specific kind of border (left, right, bottom, top, and between).

#### pPr (Previous Paragraph Properties)

This element specifies a set of paragraph properties which shall be attributed to a revision by a particular author and at a particular time. This element contains the set of properties which have been tracked as a specific set of revisions by one author.

#### pPr (Paragraph Properties)

This element specifies a set of paragraph properties which shall be applied to the contents of the parent paragraph after all style/numbering/table properties have been applied to the text. These properties are defined as *direct formatting*, since they are directly applied to the paragraph and supersede any formatting from styles.

#### pStyle (Referenced Paragraph Style)

This element specifies the style ID of the paragraph style which shall be used to format the contents of this paragraph.

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| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### right (Right Paragraph Border)

This element specifies the border which shall be displayed on the right side of the page around the specified paragraph. This shall not change based on the paragraph direction.

#### rPr (Run Properties for the Paragraph Mark)

This element specifies the set of run properties applied to the glyph used to represent the physical location of the paragraph mark for this paragraph. This paragraph mark, being a physical character in the document, can be formatted, and therefore shall be capable of representing this formatting like any other character in the document.

#### rPr (Previous Run Properties for the Paragraph Mark)

This element specifies a set of run properties applied to the glyph used to represent the physical location of the paragraph mark for this paragraph which shall be attributed to a revision by a particular author and at a particular time. This element contains the set of properties which have been tracked as a specific set of revisions by one author.

#### shd (Paragraph Shading)

This element specifies the shading applied to the contents of the paragraph.

#### snapToGrid (Use Document Grid Settings for Inter-Line Paragraph Spacing)

This element specifies whether the current paragraph should use the document grid lines per page settings defined in the docGrid element (§17.6.5) when laying out the contents in the paragraph. This setting determines whether the additional line pitch specified in the document grid shall be added to each line in this paragraph as specified by the document grid.

#### spacing (Spacing Between Lines and Above/Below Paragraph)

This element specifies the inter-line and inter-paragraph spacing which shall be applied to the contents of this paragraph when it is displayed by a consumer.

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| --- | --- |
| **Attributes** | **Description** |
| after (Spacing Below Paragraph) | Specifies the spacing that should be added after the last line in this paragraph in the document in absolute units. |
| afterAutospacing (Automatically Determine Spacing Below Paragraph) | Specifies whether a consumer shall automatically determine the spacing after this paragraph based on its contents. |
| afterLines (Spacing Below Paragraph in Line Units) | Specifies the spacing that should be added after the last line in this paragraph in the document in line units. |
| before (Spacing Above Paragraph) | Specifies the spacing that should be added above the first line in this paragraph in the document in absolute units. |
| beforeAutospacing (Automatically Determine Spacing Above Paragraph) | Specifies whether a consumer shall automatically determine the spacing before this paragraph based on its contents. |
| beforeLines (Spacing Above Paragraph in Line Units) | Specifies the spacing that should be added before the first line in this paragraph in the document in line units. |
| line (Spacing Between Lines in Paragraph) | This attribute specifies the amount of vertical spacing between lines of text within this paragraph. |
| lineRule (Spacing Between Lines) | Specifies how the spacing between lines is calculated as stored in the line attribute. |

#### suppressAutoHyphens (Suppress Hyphenation for Paragraph)

This element specifies whether any hyphenation shall be performed on this paragraph by the consumer when requested using the autoHyphenation element (§17.15.1.10) in the document's settings. This element specifies whether the current paragraph should be exempted from any hyphenation which is applied by the consumer on this document.

#### suppressLineNumbers (Suppress Line Numbers for Paragraph)

This element specifies whether line numbers shall be calculated for lines in this paragraph by the consumer when line numbering is requested using the lnNumType element (§17.6.8) in the paragraph's parent section settings. This element specifies whether the current paragraph's lines should be exempted from line numbering, which is applied by the consumer on this document, not just suppressing the display of the numbering, but removing these lines from the line numbering calculation.

#### suppressOverlap (Prevent Text Frames From Overlapping)

This element specifies whether a text frame which intersects another text frame at display time shall be allowed to overlap the contents of the other text frame. If a text frame cannot overlap other text frames, it shall be repositioned when displayed to prevent this overlap as needed.

#### tab (Custom Tab Stop)

This element specifies a single custom tab stop defined within a set of paragraph properties in a document. A tab stop location shall always be measured relative to the leading edge of the paragraph in which it is used (that is, the left edge for a left-to-right paragraph, and the right edge for a right-to-left paragraph).

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| **Attributes** | **Description** |
| leader (Tab Leader Character) | Specifies the character which shall be used to fill in the space created by a tab which ends at this custom tab stop. This character shall be repeated as required to completely fill the tab spacing generated by the tab character. |
| pos (Tab Stop Position) | Specifies the position of the current custom tab stop with respect to the current page margins. |
| val (Tab Stop Type) | Specifies the style of custom tab stop, which determines the behavior of the tab stop and the alignment which shall be applied to text entered at the current custom tab stop. |

#### tabs (Set of Custom Tab Stops)

This element specifies a sequence of custom tab stops which shall be used for any tab characters in the current paragraph.

#### textAlignment (Vertical Character Alignment online)

This element specifies the vertical alignment of all text on each line displayed within a paragraph. If the line height (before any added spacing) is larger than one or more characters on the line, all characters are aligned to each other as specified by this element.

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| **Attributes** | **Description** |
| val (Vertical Character Alignment Position) | Specifies the style of vertical alignment which shall be used to align the characters on each line in the current paragraph. |

#### textboxTightWrap (Allow Surrounding Paragraphs to Tight Wrap to Text Box Contents)

This element specifies whether, for paragraphs in a text box, the surrounding text shall be allowed to overlap with the empty text box boundaries and tight wrap to the extents of the text within the text box.

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| --- | --- |
| **Attributes** | **Description** |
| val (Lines to Tight Wrap to Paragraph Extents) | Specifies the lines in the parent paragraph which shall allow the text to be tight wrapped to the paragraph (and not the text box) extents when displaying the document. |

#### textDirection (Paragraph Text Flow Direction)

This element specifies the direction of the text flow for this paragraph.

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| --- | --- |
| **Attributes** | **Description** |
| val (Direction of Text Flow) | Specifies the direction of the text flow for this object. |

#### top (Paragraph Border Above Identical Paragraphs)

This element specifies the border which shall be displayed above a set of paragraphs which have the same set of paragraph border settings.

#### topLinePunct (Compress Punctuation at Start of a Line)

This element specifies whether punctuation shall be compressed when it appears as the first character in a line, allowing subsequent characters on the line to be move in accordingly.

#### widowControl (Allow First/Last Line to Display on a Separate Page)

This element specifies whether a consumer shall prevent a single line of this paragraph from being displayed on a separate page from the remaining content at display time by moving the line onto the following page.

#### wordWrap (Allow Line Breaking At Character Level)

This element specifies whether a consumer shall break text which exceeds the text extents of a line by breaking the word across two lines (breaking on the character level) or by moving the word to the following line (breaking

### Run

The next level of the document hierarchy is the *run*, which defines a region of text with a common set of properties. A run is represented by an r element (§17.3.2.25), which allows the producer to specify a single set of formatting properties, applying the same information to all the contents of the run.

#### b (Bold)

This element specifies whether the bold property shall be applied to all non-complex script characters in the contents of this run when displayed in a document.

#### bCs (Complex Script Bold)

This element specifies whether the bold property shall be applied to all complex script characters in the contents of this run when displayed in a document.

#### bdo (Bidirectional Override)

This element specifies a directional override, which shall be applied as described by the Bidirectional Algorithm (cf. Unicode Technical Report #9). [*Note*: The presence of this markup is functionally equivalent to the presence of a LRO/RLO character at the location of the start element, and a corresponding PDF character at the location of the end element in a string of Unicode text. *end note*]

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| **Attributes** | **Description** |
| val (Direction of Override) | Specifies the direction of the override being applied. |

#### bdr (Text Border)

This element specifies information about the border applied to the text in the current run.

#### caps (Display All Characters As Capital Letters)

This element specifies that any lowercase characters in this text run shall be formatted for display only as their capital letter character equivalents. This property does not affect any non-alphabetic character in this run and does not change the Unicode character for lowercase text, only the method in which it is displayed.

#### color (Run Content Color)

This element specifies the color which shall be used to display the contents of this run in the document.

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| **Attributes** | **Description** |
| themeColor (Run Content Theme Color) | Specifies a theme color which should be applied to the current run. |
| themeShade (Run Content Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this run’s contents. |
| themeTint (Run Content Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this run’s contents. |
| val (Run Content Color) | Specifies the color for this run. |

#### cs (Use Complex Script Formatting on Run)

This element specifies whether the contents of this run shall be treated as complex script text regardless of their Unicode character values when determining the formatting for this run.

#### dir (Bidirectional Embedding Level)

This element specifies that the embedding level of its contents shall be increased, as described by the Bidirectional Algorithm (cf. Unicode Technical Report #9). Unlike the rtl element (§17.3.2.30), this element can be nested and causes the embedding level to increase appropriately. Within this element, the semantics for the rtl element shall continue apply, specifying a high-level override of the character classification applied at the appropriate embedding level. [*Note*: The presence of this markup is functionally equivalent to the presence of an LRE/RLE character at the location of the start element, and a corresponding PDF character at the location of the end element in a string of Unicode text. *end note*]

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| **Attributes** | **Description** |
| val (Direction of Embedding) | Specifies the direction of the embedding being applied. |

#### dstrike (Double Strikethrough)

This element specifies that the contents of this run shall be displayed with two horizontal lines through each character displayed on the line.

#### eastAsianLayout (East Asian Typography Settings)

This element specifies any East Asian typography settings which shall be applied to the contents of the run.

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| **Attributes** | **Description** |
| combine (Two Lines in One) | Specifies whether the contents of the current run should be combined into one line using the two lines in one logic described above in the parent element. |
| combineBrackets (Display Brackets Around Two Lines in One) | Specifies that the two lines in one text should be enclosed within a pair of brackets when displayed. This attribute's values determine the bracket style to put around combined text. |
| id (East Asian Typography Run ID) | Specifies a unique ID which shall be used to link multiple runs containing eastAsianLayout element to each other to ensure that their contents are correctly displayed in the document. |
| vert (Horizontal in Vertical (Rotate Text)) | Specifies that characters in this run should be rendered with a 270-degree rotation to the left from all other contents of the line when displayed in the document as described above. |
| vertCompress (Compress Rotated Text to Line Height) | Specifies whether the rotated text shall be compressed at display time in order to ensure that it fits into the existing line height without increasing the overall height of the line. |

#### effect (Animated Text Effect)

This element specifies an animated text effect which should be displayed when rendering the contents of this run. This effect is rendered around the extents of the text in the run in the same location as a run border with zero pixels of padding would be rendered (if such a run border was present).

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| --- | --- |
| **Attributes** | **Description** |
| val (Animated Text Effect Type) | Specifies the type of animated text effect which shall be applied to this text run. |

#### em (Emphasis Mark)

This element specifies the emphasis mark that shall be applied to each non-space character in this run. An *emphasis mark* is an additional character whose display position relative to the character to which it is applied is language- and writing-direction-dependent. The emphasis mark is specified by the contents of the val attribute.

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| --- | --- |
| **Attributes** | **Description** |
| val (Emphasis Mark Type) | Specifies the emphasis mark applied to each non-space character in this run. |

#### emboss (Embossing)

This element specifies that the contents of this run should be displayed as if embossed, which makes text appear as if it is raised off the page in relief.

#### fitText (Manual Run Width)

This element specifies that the contents of this run shall not be automatically displayed based on the width of its contents, rather its contents shall be resized to fit the width specified by the val attribute. This expansion/contraction shall be performed by equally increasing/decreasing the size of each character in this run's contents when displayed.

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| **Attributes** | **Description** |
| id (Fit Text Run ID) | Specifies a unique ID which shall be used to link multiple contiguous runs containing fitText elements to each other to ensure that their contents are correctly merged into the specified width in the document. |
| val (Value) | This attribute specifies the exact width of space which this run shall be fit into when displayed in the document. |

#### highlight (Text Highlighting)

This element specifies a highlighting color which is applied as a background behind the contents of this run.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Highlighting Color) | Specifies the color of the text highlighting which shall be applied to the contents of this |

#### i (Italics)

This element specifies whether the italic property should be applied to all non-complex script characters in the contents of this run when displayed in a document.

#### iCs (Complex Script Italics)

This element specifies whether the italic property should be applied to all complex script characters in the contents of this run when displayed in a document.

#### imprint (Imprinting)

This element specifies that the contents of this run should be displayed as if imprinted, which makes text appear to be imprinted or pressed into page (also referred to as 'engrave').

#### kern (Font Kerning)

This element specifies whether font kerning shall be applied to the contents of this run. If it is specified, then kerning shall be automatically adjusted when displaying characters in this run as needed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Half Point Measurement) | Specifies a positive measurement specified in half-points (1/144 of an inch). |

#### lang (Languages for Run Content)

This element specifies the languages which shall be used to check spelling and grammar (if requested) when processing the contents of this run.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bidi (Complex Script Language) | Specifies the language which shall be used when processing the contents of this run which use complex script characters, as determined by the Unicode character values of the run content. |
| eastAsia (East Asian Language) | Specifies the language which shall be used when processing the contents of this run which use East Asian characters, as determined by the Unicode character values of the run content. |
| val (Latin Language) | Specifies the language which shall be used to check spelling and grammar (if requested) when processing the contents of this run which use Latin characters, as determined by the Unicode character values of the run content. |

#### noProof (Do Not Check Spelling or Grammar)

This element specifies that the contents of this run shall not report any errors when the document is scanned for spelling and grammar. [*Note*: It is entirely at the consumer's/producer's discretion whether this is done by not checking the region for spelling and grammar, or simply by suppressing the results. *end note*]

#### oMath (Office Open XML Math)

This element specifies that this run contains WordprocessingML which shall be handled as though it was Office Open XML Math.

#### outline (Display Character Outline)

This element specifies that the contents of this run should be displayed as if they have an outline, by drawing a one-pixel wide border around the inside and outside borders of each character glyph in the run.

#### position (Vertically Raised or Lowered Text)

This element specifies the amount by which text shall be raised or lowered for this run in relation to the default baseline of the surrounding non-positioned text. This allows the text to be repositioned without altering the font size of the contents.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Signed Half-Point Measurement) | Specifies a positive or negative measurement in half-points (1/144 of an inch). |

#### r (Text Run)

This element specifies a run of content in the parent field, hyperlink, custom XML element, structured document tag, smart tag, or paragraph.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| rsidDel (Revision Identifier for Run Deletion) | Specifies a unique identifier used to track the editing session when the run was deleted from the main document. |
| rsidR (Revision Identifier for Run) | Specifies a unique identifier used to track the editing session when the run was added to the main document. |
| rsidRPr (Revision Identifier for Run Properties) | Specifies a unique identifier used to track the editing session when the run properties were last modified in the main document. |

#### rFonts (Run Fonts)

This element specifies the fonts which shall be used to display the text contents of this run. Within a single run, there can be up to four types of font slot which shall each be allowed to use a unique font:

#### rPr (Previous Run Properties)

This element specifies a set of run properties which shall be attributed to a revision by a particular author and at a particular time. This element contains the set of properties which have been tracked as a specific set of revisions by one author.

#### rPr (Run Properties)

This element specifies a set of run properties which shall be applied to the contents of the parent run after all style formatting has been applied to the text. These properties are defined as *direct formatting*, since they are directly applied to the run and supersede any formatting from styles.

#### rStyle (Referenced Character Style)

This element specifies the style ID of the character style which shall be used to format the contents of this paragraph.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### rtl (Right To Left Text)

This element specifies whether the contents of this run shall have right-to-left characteristics. Specifically, the following behaviors are applied when this element’s val attribute is true (or an equivalent):

#### shadow (Shadow)

This element specifies that the contents of this run shall be displayed as if each character has a shadow. For left-to-right text, the shadow is beneath the text and to its right; for right-to-left text, the shadow is beneath the text and to its left.

#### shd (Run Shading)

Like paragraph shading, this element specifies the shading applied to the contents of the run.

#### smallCaps (Small Caps)

This element specifies that all small letter characters in this text run shall be formatted for display only as their capital letter character equivalents in a font size two points smaller than the actual font size specified for this text. This property does not affect any non-alphabetic character in this run and does not change the Unicode character for lowercase text, only the method in which it is displayed. If this font cannot be made two point smaller than the current size, then it shall be displayed as the smallest possible font size in capital letters.

#### snapToGrid (Use Document Grid Settings For Inter-Character Spacing)

This element specifies whether the current run should use the document grid characters per line settings defined in the docGrid element (§17.6.5) when laying out the contents in this run. This setting determines whether the additional character pitch specified in the document grid shall be added to each character in this run as specified by the document grid.

#### spacing (Character Spacing Adjustment)

This element specifies the amount of character pitch which shall be added or removed after each character in this run before the following character is rendered in the document. This property has an effect equivalent to the additional character pitched added by a document grid applied to the contents of a run.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Positive or Negative Value in Twentieths of a Point) | Specifies a positive or negative measurement in twentieths of a point (equivalent to 1/1440th of an inch). |

#### specVanish (Paragraph Mark Is Always Hidden)

This element specifies that the given run shall always behave as if it is hidden, even when hidden text is being displayed in the current document.

#### strike (Single Strikethrough)

This element specifies that the contents of this run shall be displayed with a single horizontal line through the center of the line.

#### sz (Non-Complex Script Font Size)

This element specifies the font size which shall be applied to all noncomplex script characters in the contents of this run when displayed. The font sizes specified by this element’s val attribute are expressed as half-point values.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Half Point Measurement) | Specifies a positive measurement specified in half-points (1/144 of an inch). |

#### szCs (Complex Script Font Size)

This element specifies the font size which shall be applied to all complex script characters in the contents of this run when displayed. The font sizes specified by this element’s val attribute are expressed as half-point values.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Half Point Measurement) | Specifies a positive measurement specified in half-points (1/144 of an inch). |

#### u (Underline)

This element specifies that the contents of this run should be displayed along with an underline appearing directly below the character height (less all spacing above and below the characters on the line).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| color (Underline Color) | Specifies the color for the underlining on this run. |
| themeColor (Underline Theme Color) | Specifies a theme color which should be applied to the current underline. |
| themeShade (Underline Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this underline. |
| themeTint (Underline Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this underline's contents. |
| val (Underline Style) | Specifies the pattern which shall be used to create the underline applied beneath the text in this run. |

#### vanish (Hidden Text)

This element specifies whether the contents of this run shall be hidden from display at display time in a document. [*Note*: The setting should affect the normal display of text, but an application can have settings to force hidden text to be displayed. *end note*]

#### vertAlign (Subscript/Superscript Text)

This element specifies the alignment which shall be applied to the contents of this run-in relation to the default appearance of the run's text. This allows the text to be repositioned as subscript or superscript without altering the font size of the run properties.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Subscript/Superscript Value) | Specifies the type of vertical alignment applied to the contents of the current run. |

#### w (Expanded/Compressed Text)

This element specifies the amount by which each character shall be expanded or when the character is rendered in the document. This property has an of stretching or compressing each character in the run, as opposed to the spacing element (§17.3.2.35) which expands/compresses the text by adding additional character pitch but not changing the width of the actual characters displayed on the line.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Text Expansion/Compression Value) | Specifies that the percentage by which the contents of this run shall be expanded or compressed with respect to its normal (100%) character width. |

#### webHidden (Web Hidden Text)

This element specifies whether the contents of this run shall be hidden from display at display time in a document when the document is being displayed in a web page view (§17.18.102). [*Note*: The setting should affect the normal display of text in a web page view, but an application can have settings to force hidden text to be displayed. *end note*]

### Run Content

The final level of the document hierarchy is *run content*, which is defined as the set of elements which can be contained as the contents of a particular run in a document.

#### br (Break)

This element specifies that a break shall be placed at the current location in the run content. A *break* is a special character which is used to override the normal line breaking that would be performed based on the normal layout of the document’s contents. [*Example*: Normal breaking for English would occur only after a breaking space or optional hyphen character. *end example*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| clear (Restart Location For Text Wrapping Break) | Specifies the location which shall be used as the next available line when the break’s type attribute has a value of textWrapping. This property only affects the restart location when the current run is being displayed on a line which does not span the full text |
| type (Break Type) | Specifies the break type of the current break. The break type determines the next location where text shall be placed after this manual break is applied to the text contents (see possible values for details). |

#### contentPart (Content Part)

This element specifies a reference to XML content in a format not defined by ECMA-376. [*Note*: This part allows the native use of other commonly used interchange formats, such as:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

#### control (Embedded Control)

This element specifies that the parent embedded object is a representation of an embedded control. This element shall be used to associate the appropriate embedded control settings and properties when the document is displayed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Embedded Control Properties Relationship Reference) | Specifies the relationship ID for the relationship which contains the properties for this embedded control. This property bag is contained in a separate part within the Office Open XML package. |
| name (Unique Name for Embedded Control) | Specifies a unique name for this embedded control. This name shall be unique across all controls in this document. |
| shapeid (Shape Reference) | Specifies the shape ID for a shape which shall be used to define the presentation and location of this embedded control within the document if the control is floating using the DrawingML syntax. |

#### cr (Carriage Return)

This element specifies that a carriage return shall be placed at the current location in the run content. A *carriage return* is the equivalent of Unicode character 000D and is used to end the current line of text in WordprocessingML.

#### dayLong (Date Block - Long Day Format)

This element specifies the presence of a date block at the current location in the run content. A *date block* is a non-editable region of text which shall display the current date filtered through the specified date picture (see following paragraphs) . [*Note*: The date block is a legacy construct used for compatibility with older wordprocessors and should not be produced unless it was consumed while reading a document – it is recommended that the DATE field is used in its place. *end note*]

#### dayShort (Date Block - Short Day Format)

This element specifies the presence of a date block at the current location in the run content. A *date block* is a non-editable region of text which shall display the current date filtered through the specified date picture (see following paragraphs) . [*Note*: The date block is a legacy construct used for compatibility with older wordprocessors and should not be produced unless it was consumed while reading a document – it is recommended that the DATE field is used in its place. *end note*]

#### delText (Deleted Text)

This element specifies that this run contains literal text which shall be displayed in the document. The delText element shall be used for all text runs which are part of a region of text that is contained in a deleted region using the del element (§17.13.5.14).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| xml:space (Content Contains Significant Whitespace) | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. |

#### dirty (Invalidated Field Cache)

This element specifies that the field has been changed and the results shall be updated on open in a conforming consumer.

#### drawing (DrawingML Object)

This element specifies that a DrawingML object is located at this position in the run’s contents. The layout properties of this DrawingML object are specified using the WordprocessingML Drawing syntax (§20.4).

#### hps (Phonetic Guide Text Font Size)

This element specifies the font size which shall be applied to the phonetic guide text in the contents of this run when displayed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Half Point Measurement) | Specifies a positive measurement specified in half-points (1/144 of an inch). |

#### hpsBaseText (Phonetic Guide Base Text Font Size)

This element specifies the font size which shall be applied to the base text of this phonetic guide text when displayed. If this element disagrees with the run properties on the phonetic guide base text rubyBase element (§17.3.3.27), then this property shall be ignored and the sz element (§17.3.2.38) in that run shall determine the size of the phonetic guide base text.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Half Point Measurement) | Specifies a positive measurement specified in half-points (1/144 of an inch). |

#### hpsRaise (Distance Between Phonetic Guide Text and Phonetic Guide Base Text)

This element specifies the distance which shall be left between the phonetic guide base text and the phonetic guide text when this phonetic guide text is displayed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Half Point Measurement) | Specifies a positive measurement specified in half-points (1/144 of an inch). |

#### lastRenderedPageBreak (Position of Last Calculated Page Break)

This element specifies that this position delimited the end of a page when this document was last saved by an application which paginates its content.

#### lid (Language ID for Phonetic Guide)

This element specifies the language which shall be used for this phonetic guide.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Language Code) | Specifies an identifier for a specific language. |

#### monthLong (Date Block - Long Month Format)

This element specifies the presence of a date block at the current location in the run content. A *date block* is a non-editable region of text which shall display the current date filtered through the specified date picture (see following paragraphs) . [*Note*: The date block is a legacy construct used for compatibility with older word processors and should not be produced unless it was consumed while reading a document – it is recommended that the DATE field is used in its place. *end note*]

#### monthShort (Date Block - Short Month Format)

This element specifies the presence of a date block at the current location in the run content. A *date block* is a non-editable region of text which shall display the current date filtered through the specified date picture (see following paragraphs). [*Note*: The date block is a legacy construct used for compatibility with older wordprocessors and should not be produced unless it was consumed while reading a document – it is recommended that the DATE field is used in its place. *end note*]

#### movie (Embedded Video)

This element specifies a location within a document where the specified parent image shall be treated as a static placeholder for an embedded movie. [*Note*: A list of suggested video types in provided in §15.2.17. *end note*]The specified movie file's contents should be displayed when requested at this location in the document. The location of the embedded movie to be displayed when supported shall be specified by the relationship whose Id attribute matches the id attribute on this element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

#### noBreakHyphen (Non Breaking Hyphen Character)

This element specifies that a nonbreaking hyphen character shall be placed at the current location in the run content.

#### object (Embedded Object)

This element specifies that an embedded object is located at this position in the run’s contents. The layout properties of this embedded object, as well as an optional static representation, are specified using the drawing element (§17.3.3.9).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dxaOrig (Original Image Width) | Specifies the original (natural) width of the image representation of the current control within the document. Some vector image formats do not store a native size within their |
| dyaOrig (Original Image Height) | Specifies the original (natural) height of the image representation of the current control within the document. Some vector image formats do not store a native size within their format, and this attribute shall only be used in those cases to store this information, so that the image can be appropriately restored as needed. |

#### objectEmbed (Embedded Object Properties)

This element specifies the visual properties and associated server application of an embedded object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| drawAspect (Object Representation) | Specifies how the object is represented visually in the application. |
| fieldCodes (Field Switches) | This element specifies the WordprocessingML field switches which shall be stored with an embedded object, using the set of field switches defined by the LINK field, as specified in §17.16.5.32. This element shall specify the exact field switches for the field which represents the object. |
| id (Relationship to Embedded Object Data) | Specifies the relationship ID for the relationship which targets the Embedded Object Part containing the embedded object data. |
| progId (Object Application) | Specifies the application associated with the object. |
| shapeId (Object Shape) | Specifies the shape with which the object is associated. A shape provides the visual placeholder for an object and this attribute is set to the ID of the placeholder shape. |

#### objectLink (Linked Object Properties)

This element specifies the visual properties, associated server application and refresh mode of an embedded linked object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| drawAspect (Object Representation) | Specifies how the object is represented visually in the application. |
| fieldCodes (Field Switches) | This element specifies the WordprocessingML field switches which shall be stored with an embedded object, using the set of field switches defined by the LINK field, as specified in §17.16.5.32. This element shall specify the exact field switches for the field which represents the object. |
| id (Relationship to Embedded Object Data) | Specifies the relationship ID for the relationship which targets the Embedded Object Part containing the embedded object data. |
| lockedField (Object Refresh Flag) | Specifies whether the object's appearance is locked. If it is locked, the object's current representation shall be locked to prevent any user interaction or automatic application behavior from modifying its contents. |
| progId (Object Application) | Specifies the application associated with the object. |
| shapeId (Object Shape) | Specifies the shape with which the object is associated. A shape provides the visual placeholder for an object and this attribute is set to the ID of the placeholder shape. |
| updateMode (Object Update Mode) | Specifies how the object is updated with new data - automatically or on-demand by the user. |

#### pgNum (Page Number Block)

This element specifies the presence of a page number block at the current location in the run content. A *page number block* is a non-editable region of text which shall display the current page using ascending decimal numbers. [*Note*: The page number block is a legacy construct used for compatibility with older wordprocessors and should not be produced unless it was consumed while reading a document – it is recommended that the PAGENUM field is used in its place. *end note*]

#### ptab (Absolute Position Tab Character)

This element specifies that an absolute position tab character shall be placed at the current location in the run content. An *absolute position tab* is a character which is used to advance the position on the current line of text when displaying this WordprocessingML content, using the following logic:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| alignment (Positional Tab Stop Alignment) | Specifies the location of the positional tab stop on the line, as well as the alignment which shall be applied to text subsequent to the current positional tab stop. |
| leader (Tab Leader Character) | Specifies the character which shall be used to fill in the space created by a positional tab. This character shall be repeated as required to completely fill the tab spacing generated by the positional tab character. |
| relativeTo (Positional Tab Base) | Specifies the extents which shall be used to calculate the absolute positioning of this positional tab character. |

#### rt (Phonetic Guide Text)

This element specifies the presence of the guide text within a phonetic guide at the current location in the document.

#### ruby (Phonetic Guide)

This element specifies the presence of a phonetic guide at the current location in the document. A *phonetic guide* (often called ruby text) is a run of content with base text which appears at the normal baseline location for text in this run, with phonetic guide text displayed above it in the document. The resulting construct is called a phonetic guide as it is typically used to map words in one language to another phonetically.

#### rubyAlign (Phonetic Guide Text Alignment)

This element specifies the alignment setting which shall be used to determine the placement of phonetic guide text with respect to the base text when this phonetic guide is displayed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Phonetic Guide Text Alignment Value) | Specifies the type of alignment to be applied to the phonetic guide text. |

#### rubyBase (Phonetic Guide Base Text)

This element specifies the presence of the base text within a phonetic guide at the current location in the document.

#### rubyPr (Phonetic Guide Properties)

This element specifies a set of properties which determine the behavior and appearance of a phonetic guide within the document.

#### softHyphen (Optional Hyphen Character)

This element specifies that an optional hyphen character shall be placed at the current location in the run content. An *optional hyphen* is a character which can be used as a line breaking character for the current line of text when displaying this WordprocessingML content, using the following logic:

#### sym (Symbol Character)

This element specifies the presence of a symbol character at the current location in the run’s content. A *symbol character* is a special character within a run’s content which does not use any of the run fonts specified in the rFonts element (§17.3.2.26) (or by the style hierarchy).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| char (Symbol Character Code) | Specifies the hexadecimal code for the Unicode character value of the symbol. |
| font (Symbol Character Font) | Specifies a font which shall be used to format this symbol character. |

#### t (Text)

This element specifies that this run contains literal text which shall be displayed in the document. The t element shall be used for all text runs which are not:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| xml:space (Content Contains Significant Whitespace) | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. |

#### tab (Tab Character)

This element specifies that a tab character shall be placed at the current location in the run content. A *tab* is a character which is used to advance the position on the current line of text when displaying this WordprocessingML content, using the following logic:

#### yearLong (Date Block - Long Year Format)

This element specifies the presence of a date block at the current location in the run content. A *date block* is a non-editable region of text which shall display the current date filtered through the specified date picture (see following paragraphs). [*Note*: The date block is a legacy construct used for compatibility with older wordprocessors and should not be produced unless it was consumed while reading a document – it is recommended that the DATE field is used in its place. *end note*]

#### yearShort (Date Block - Short Year Format)

This element specifies the presence of a date block at the current location in the run content. A *date block* is a non-editable region of text which shall display the current date filtered through the specified date picture (see following paragraphs). [*Note*: The date block is a legacy construct used for compatibility with older wordprocessors and should not be produced unless it was consumed while reading a document – it is recommended that the DATE field is used in its place. *end note*]

### Border Properties (CT\_Border)

This common complex type specifies the set of attributes used to define an object's border.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| color (Border Color) | Specifies the color for this border. |
| frame (Create Frame Effect) | Specifies whether the specified border should be modified to create a frame effect by reversing the border's appearance from the edge nearest the text to the edge furthest from the text. |
| shadow (Border Shadow) | Specifies whether this border should be modified to create the appearance of a shadow. |
| space (Border Spacing Measurement) | Specifies the spacing offset that shall be used to place this border on the parent object. |
| sz (Border Width) | Specifies the width of the current border. |
| themeColor (Border Theme Color) | Specifies the base theme color used to generate the border color. The border color is the RGB value associated with themeColor as further transformed by themeTint or themeShade (if one is present), else the background color is the RGB value associated with themeColor. |
| themeShade (Border Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this border instance. If the themeColor attribute is not present, then this attribute shall not be used. |
| themeTint (Border Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this border instance. If the themeColor attribute is not present, then this attribute shall not be used. |
| val (Border Style) | Specifies the style of border used on this object. |

### Shading Properties (CT\_Shd)

This common complex type specifies the set of attributes used to define an object's shading.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| color (Shading Pattern Color) | Specifies the color used for any foreground pattern specified for this shading using the val attribute. |
| fill (Shading Background Color) | Specifies the color used for the background for this shading. |
| themeColor (Shading Pattern Theme Color) | Specifies a theme color which should be applied to any foreground pattern specified for this shading using the val attribute. |
| themeFill (Shading Background Theme Color) | Specifies a theme color which should be applied to the background for this shading. |
| themeFillShade (Shading Background Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this shading color. |
| themeFillTint (Shading Background Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this shading instance. |
| themeShade (Shading Pattern Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this shading color. |
| themeTint (Shading Pattern Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this shading instance. |
| val (Shading Pattern) | Specifies the pattern which shall be used to lay the pattern color over the background color for this paragraph shading. |

## Tables

Another form of block-level content in WordprocessingML, a *table* is a set of paragraphs (and other block-level content) arranged in *rows* and *columns*. Tables in WordprocessingML are defined via the tbl element, which is analogous to the HTML <table> tag. The table element specifies the location of a table present in the document.

### bidiVisual (Visually Right to Left Table)

This element specifies that the cells with this table shall be visually represented in a right to left direction. This element also affects the application of all table-level properties.

### bottom (Table Cell Bottom Margin Exception)

This element specifies the amount of space which shall be left between the bottom extent of the cell contents and the border of a specific table cell within a table. This setting shall override the table cell bottom margin definition specified by the bottom element contained within the table properties (§17.4.5).

### bottom (Table Cell Bottom Border)

This element specifies the border which shall be displayed at the bottom of the current table cell. The appearance of this table cell border in the document shall be determined by the following settings:

### bottom (Table Bottom Border)

This element specifies the border which shall be displayed at the bottom of the current table. The appearance of this table border in the document shall be determined by the following settings:

### bottom (Table Cell Bottom Margin Default)

This element specifies the amount of space which shall be left between the bottom extent of the cell contents and the border of all table cells within the parent table (or table row). This setting can be overridden by the table cell bottom margin definition specified by the bottom element contained within the table cell's properties (§17.4.2).

### cantSplit (Table Row Cannot Break Across Pages)

This element specifies whether the contents within the current cell shall be rendered on a single page. When displaying the contents of a table cell (such as the table cells in ECMA-376), it is possible that a page break would fall within the contents of a table cell, causing the contents of that cell to be displayed across two different pages. If this property is set, then all contents of a table row shall be rendered on the same page by moving the start of the current row to the start of a new page if necessary. If the contents of this table row cannot fit on a single page, then this row shall start on a new page and flow onto multiple pages as necessary.

### cnfStyle (Table Row Conditional Formatting)

This element specifies the set of conditional table style formatting properties which have been applied to this table row. [*Note*: This property is an optimization which is used by consumers to determine if a given property on a table row is the result of the table style conditional formatting properties vs. direct formatting on the table cell itself. It specifies the components of the conditional formatting in the table style applied to this cell, so that the table's conditional formatting can be applied after the document is displayed without having the table style properties override the style hierarchy. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| evenHBand (Even Numbered Horizontal Band) | Specifies that the object has inherited the conditional properties applied to the even numbered horizontal bands of the parent object. |
| evenVBand (Even Numbered Vertical Band) | Specifies that the object has inherited the conditional properties applied to the even numbered vertical bands of the parent object. |
| firstColumn (First Column) | Specifies that the object has inherited the conditional properties applied to the first column of the parent object. |
| firstRow (First Row) | Specifies that the object has inherited the conditional properties applied to the first row of the parent object. |
| firstRowFirstColumn (First Row and First Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the first row and first column of the parent object. |
| firstRowLastColumn (First Row and Last Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the first row and last column of the parent object. |
| lastColumn (Last Column) | Specifies that the object has inherited the conditional properties applied to the last column of the parent object. |
| lastRow (Last Row) | Specifies that the object has inherited the conditional properties applied to the last row of the parent object. |
| lastRowFirstColumn (Last Row and First Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the last row and first column of the parent object. |
| lastRowLastColumn (Last Row and Last Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the last row and last column of the parent object. |
| oddHBand (Odd Numbered Horizontal Band) | Specifies that the object has inherited the conditional properties applied to the odd numbered horizontal bands of the parent object. |
| oddVBand (Odd Numbered Vertical Band) | Specifies that the object has inherited the conditional properties applied to the odd numbered vertical bands of the parent object. |

### cnfStyle (Table Cell Conditional Formatting)

This element specifies the set of conditional table style formatting properties which have been applied to this table cell. [*Note*: This property is an optimization which is used by consumers to determine if a given property on a table cell is the result of the table style conditional formatting properties vs. direct formatting on the table cell itself. It specifies the components of the conditional formatting in the table style applied to this cell, so that the table's conditional formatting can be applied after the document is displayed without having the table style properties override the style hierarchy. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| evenHBand (Even Numbered Horizontal Band) | Specifies that the object has inherited the conditional properties applied to the even numbered horizontal bands of the parent object. |
| evenVBand (Even Numbered Vertical Band) | Specifies that the object has inherited the conditional properties applied to the even numbered vertical bands of the parent object. |
| firstColumn (First Column) | Specifies that the object has inherited the conditional properties applied to the first column of the parent object. |
| firstRow (First Row) | Specifies that the object has inherited the conditional properties applied to the first row of the parent object. |
| firstRowFirstColumn (First Row and First Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the first row and first column of the parent object. |
| firstRowLastColumn (First Row and Last Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the first row and last column of the parent object. |
| lastColumn (Last Column) | Specifies that the object has inherited the conditional properties applied to the last column of the parent object. |
| lastRow (Last Row) | Specifies that the object has inherited the conditional properties applied to the last row of the parent object. |
| lastRowFirstColumn (Last Row and First Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the last row and first column of the parent object. |
| lastRowLastColumn (Last Row and Last Column) | Specifies that the object has inherited the conditional properties applied to the cell that is in the last row and last column of the parent object. |
| oddHBand (Odd Numbered Horizontal Band) | Specifies that the object has inherited the conditional properties applied to the odd numbered horizontal bands of the parent object. |
| oddVBand (Odd Numbered Vertical Band) | Specifies that the object has inherited the conditional properties applied to the odd numbered vertical bands of the parent object. |

### divId (Associated HTML div ID)

This element specifies the HTML div information which is associated with the current table row. This information, stored in the Web Settings part, is used to associate one or more table rows with a particular HTML div element. [*Note*: This property is used when saving an HTML document into the WordprocessingML format in order to prevent a loss of all HTML div information, so that the document can later be saved back into HTML format and have the stored information replaced, since the HTML div can store formatting properties on arbitrary regions. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contain a decimal number. |

### end (Table Cell Trailing Margin Exception)

This element specifies the amount of space which shall be present between the trailing extent of the current cell's text contents and the trailing border of a specific individual table cell within a table. This setting shall override the table cell trailing margin definition specified by the end element contained within the table properties (§17.4.11).

### end (Table Cell Trailing Margin Default)

This element specifies the amount of space which shall be present between the trailing extent of the cell contents and the trailing border of all table cells within the parent table (or table row) . This setting can be overridden by the table cell trailing margin definition specified by the end element contained within the table cell's properties (§17.4.10).

### end (Table Cell Trailing Edge Border)

This element specifies the border which shall be displayed on the trailing edge of the current table cell (right for LTR tables, left for RTL tables). The appearance of this table cell border in the document shall be determined by the following settings:

### end (Table Trailing Edge Border)

This element specifies the border which shall be displayed at the trailing edge of the current table (right for LTR tables, left for RTL tables). The appearance of this table border in the document shall be determined by the following settings:

### gridAfter (Grid Columns After Last Cell)

This element specifies the number of grid columns in the parent table's table grid (§17.4.48; §17.4.47) which shall be left after the last cell in the table row.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contain a decimal number. |

### gridBefore (Grid Columns Before First Cell)

This element specifies the number of grid columns in the parent table's table grid (§17.4.48; §17.4.47) which must be skipped before the contents of this table row (its table cells) are added to the parent table. [*Note*: This property is used to specify tables whose leading edge (left for left-to-right tables, right for right-to-left tables) does not start at the first grid column (the same shared edge). *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contain a decimal number. |

### gridCol (Grid Column Definition)

This element specifies the presence and details about a single grid column within a table grid. A *grid column* is a logical column in a table used to specify the presence of a shared vertical edge in the table. When table cells are then added to this table, these shared edges (or grid columns, looking at the column between those shared edges) determine how table cells are placed into the table grid.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| w (Grid Column Width) | Specifies the width of this grid column. |

### gridSpan (Grid Columns Spanned by Current Table Cell)

This element specifies the number of grid columns in the parent table's table grid which shall be spanned by the current cell. This property allows cells to have the appearance of being merged, as they span vertical boundaries of other cells in the table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contain a decimal number. |

### header (Header Cell Reference)

This element specifies a reference, using a unique identifier, to a table header cell that is associated with the current table cell. The identifier representing the reference shall be stored on this element’s val attribute and is used to reference the unique identifier value of the id attribute of a header cell tc element of the current table. The contents of the table header cell tc element designated by the specific unique identifier in its *id* attribute shall be used as the table header information associated with the table cell that references that specific unique identifier.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### headers (Header Cells Associated With Table Cell)

This element specifies the list of header cells, as specified by children header elements, which provide header information associated with the current table cell. Each header cell shall specify a unique identifier, as specified by the use of the attribute id on the header cell tc element. This element is typically used to gather header information about data and sub header cells.

### hidden (Hidden Table Row Marker)

This element specifies that the glyph representing the end character of current table row shall not be displayed in the current document.

### hideMark (Ignore End Of Cell Marker In Row Height Calculation)

This element specifies whether the end of cell glyph shall influence the height of the given table row in the table. If it is specified, then only printing characters in this cell shall be used to determine the row height.

### insideH (Table Inside Horizontal Edges Border)

This element specifies the border which shall be displayed on all horizontal table cell borders which are not on an outmost edge of the parent table (all horizontal borders which are not the topmost or bottommost border). The appearance of this table cell border in the document shall be determined by the following settings:

### insideH (Table Cell Inside Horizontal Edges Border)

This element specifies the border which shall be displayed on all interior horizontal edges of the current group of table cells. [*Note*: Although individual table cells have no concept of an internal edge, which would render this property useless in most cases, it is used to determine the cell borders to apply to a specific group of cells as part of table conditional formatting in a table style, for example, the inside horizontal edges on the set of cells in the first column. *end note*]

### insideV (Table Inside Vertical Edges Border)

This element specifies the border which shall be displayed on all vertical table cell borders which are not on an outmost edge of the parent table (all horizontal borders which are not the leftmost or rightmost border). The appearance of this table cell border in the document shall be determined by the following settings:

### insideV (Table Cell Inside Vertical Edges Border)

This element specifies the border which shall be displayed on all interior vertical edges of the current group of table cells. [*Note*: Although individual table cells have no concept of an internal edge, which would render this property useless in most cases, it is used to determine the cell borders to apply to a specific group of cells as part of table conditional formatting in a table style, for example, the inside vertical edges on the set of cells in the header row. *end note*]

### jc (Table Alignment Exception)

This element specifies the alignment of the set of rows which are part of the current table properties exception list with respect to the text margins in the current section. When a table is placed in a WordprocessingML document that does not have the same width as the margins, this property is used to determine how the table is positioned with respect to those margins. The interpretation of property is reversed if the parent table is right to left using the bidiVisual element (§17.4.1).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Alignment Type) | Specifies the justification which should be applied to the parent table. |

### jc (Table Row Alignment)

This element specifies the alignment of a single row in the parent table with respect to the text margins in the current section. When a table is placed in a WordprocessingML document that does not have the same width as the margins, this property is used to determine how a specific row in that table is positioned with respect to those margins. The interpretation of property is reversed if the parent table is right to left using the bidiVisual element (§17.4.1).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Alignment Type) | Specifies the justification which should be applied to the parent table. |

### jc (Table Alignment)

This element specifies the alignment of the current table with respect to the text margins in the current section. When a table is placed in a WordprocessingML document that does not have the same width as the margins, this property is used to determine how the table is positioned with respect to those margins. The interpretation of property is reversed if the parent table is right to left using the bidiVisual element (§17.4.1).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Alignment Type) | Specifies the justification which should be applied to the parent table. |

### noWrap (Don't Wrap Cell Content)

This element specifies how this table cell shall be laid out when the parent table is displayed in a document. This setting only affects the behavior of the cell when the tblLayout for this row (§17.4.52; §17.4.53) is set to use the auto algorithm.

### shd (Table Shading Exception)

This element specifies the shading which shall be applied to all cells in the current row as part of a set of table-level property exceptions. Similarly to paragraph shading, this shading shall be applied to the contents of the tab up to the table borders, regardless of the presence of text - unlike cell shading, table shading shall include any cell padding. This property shall be superseded by any cell-level shading on any cell in this row (§17.4.32).

### shd (Table Shading)

This element specifies the shading which shall be applied to the extents the current table. Similarly to paragraph shading, this shading shall be applied to the contents of the tab up to the table borders, regardless of the presence of text - unlike cell shading, table shading shall include any cell padding. This property shall be superseded by any cell-level shading via any table-level property exceptions (§17.4.30); or on any cell in this row (§17.4.32).

### shd (Table Cell Shading)

This element specifies the shading which shall be applied to the extents of the current table cell. Similarly to paragraph shading, this shading shall be applied to the contents of the cell up to the cell borders, regardless of the presence of text.

### start (Table Cell Leading Edge Border)

This element specifies the border which shall be displayed on the leading edge of the current table cell (left for LTR tables, right for RTL tables). The appearance of this table cell border in the document shall be determined by the following settings:

### start (Table Cell Leading Margin Default)

This element specifies the amount of space which shall be left between the leading edge of the cell contents and the leading edge of all table cells within the parent table (or table row). This setting can be overridden by the table cell leading margin definition specified by the start element contained within the table cell's properties (§17.4.35).

### start (Table Cell Leading Margin Exception)

This element specifies the amount of space which shall be left between the leading extent of the current cell contents and the leading edge border of a specific individual table cell within a table. This setting shall override the table cell leading margin definition specified by the start element contained within the table properties (§17.4.34).

### start (Table Leading Edge Border)

This element specifies the border which shall be displayed at the leading edge of the current table (left for LTR tables, right for RTL tables). The appearance of this table border in the document shall be determined by the following settings:

### tbl (Table)

This element specifies the contents of a table present in the document. A *table* is a set of paragraphs (and other block-level content) arranged in *rows* and *columns*. Tables in WordprocessingML are defined via the tbl element, which is analogous to the HTML table tag.

### tblBorders (Table Borders)

This element specifies the set of borders for the edges of the current table, using the six border types defined by its child elements.

### tblBorders (Table Borders Exceptions)

This element specifies the set of borders for the edges of the parent table row via a set of table-level property exceptions, using the six border types defined by its child elements.

### tblCaption (Table Caption)

This element specifies the caption for the table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### tblCellMar (Table Cell Margin Exceptions)

This element specifies a set of cell margins for all cells in the parent table row via a set of table-level property exceptions. These settings can be overridden by the table cell margin definition specified by the tcMar element contained within the table cell's properties (§17.4.41).

### tblCellMar (Table Cell Margin Defaults)

This element specifies the default cell margin settings for all cells in the current table. These setting can be overridden by the table cell margin definition specified by the tcMar element contained within the table cell's properties (§17.4.68) or by a set of table-level property exceptions (§17.4.41).

### tblCellSpacing (Table Row Cell Spacing)

This element specifies the default table cell spacing (the spacing between adjacent cells and the edges of the table) for all cells in the parent row. If specified, this element specifies the minimum amount of space which shall be left between all cells in the table including the width of the table borders in the calculation. It is important to note that row-level cell spacing shall be added inside of the text margins, which shall be aligned with the innermost starting edge of the text extents in a cell without row-level indentation or cell spacing. Row-level cell spacing shall not increase the width of the overall table.

### tblCellSpacing (Table Cell Spacing Exception)

This element specifies a table cell spacing exception for all cells in the parent table row as part of a set of table-level property exceptions. If specified, this element specifies the minimum amount of space which shall be left between all cells in the parent row after including the width of the table borders in the calculation. This setting shall be superseded by the row cell spacing value (§17.4.43). It is important to note that table-level cell spacing shall be added outside of the text margins, which shall be aligned with the innermost starting edge of the text extents in a table cell.

### tblCellSpacing (Table Cell Spacing Default)

This element specifies the default table cell spacing (the spacing between adjacent cells and the edges of the table) for all cells in the parent table. If specified, this element specifies the minimum amount of space which shall be left between all cells in the table including the width of the table borders in the calculation. This setting shall be superseded by a table-level exception (§17.4.44) or the row cell spacing value (§17.4.43) in that order. It is important to note that table-level cell spacing shall be added outside of the text margins, which shall be aligned with the innermost starting edge of the text extents in a table cell.

### tblDescription (Table Description)

This element specifies the description for the table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### tblGrid (Previous Table Grid)

This element specifies a previous table grid state, the modifications to which shall be attributed to a revision by a particular author and at a particular time. This element contains the table grid settings which were previously in place before a specific set of revisions by one author. The *table grid* is a definition of the set of grid columns which define all of the shared vertical edges of the table, as well as default widths for each of these grid columns. These grid column widths are then used to determine the size of the table based on the table layout algorithm used (§17.4.52;§17.4.53).

### tblGrid (Table Grid)

This element specifies the table grid for the current table. The *table grid* is a definition of the set of grid columns which define all of the shared vertical edges of the table, as well as default widths for each of these grid columns. These grid column widths are then used to determine the size of the table based on the table layout algorithm used (§17.4.52;§17.4.53).

### tblHeader (Repeat Table Row on Every New Page)

This element specifies that the current table row shall be repeated at the top of each new page on which part of this table is displayed. This gives this table row the behavior of a 'header' row on each of these pages. This element can be applied to any number of rows at the top of the table structure in order to generate multi-row table headers.

### tblInd (Table Indent from Leading Margin)

This element specifies the indentation which shall be added before the leading edge of the current table in the document (the left edge in a left-to-right table, and the right edge in a right-to-left table). This indentation should shift the table into the text margin by the specified amount.

### tblInd (Table Indent from Leading Margin Exception)

This element specifies the indentation which shall be added before the leading edge of the set of parent table rows which have this set of table-level property exceptions applied. This indentation should shift the table into the text margin by the specified amount in the document (the left edge in a left-to-right table, and the right edge in a right-to-left table).

### tblLayout (Table Layout)

This element specifies the algorithm which shall be used to lay out the contents of this table within the document. When a table is displayed in a document, it can either be displayed using a fixed width or autofit layout algorithm (each discussed in the simple type referenced by the val attribute).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| type (Table Layout Setting) | Specifies the algorithm which shall be used to lay out the contents of the parent table (see simple type definition for details on each algorithm used). |

### tblLayout (Table Layout Exception)

This element specifies the algorithm which shall be used to lay out the contents of all rows with this table within the table which have the set of table-level property exceptions specified by the parent element. When a table is displayed in a document, it can either be displayed using a fixed width or autofit layout algorithm (each discussed in the simple type referenced by the val attribute).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| type (Table Layout Setting) | Specifies the algorithm which shall be used to lay out the contents of the parent table (see simple type definition for details on each algorithm used). |

### tblLook (Table Style Conditional Formatting Settings Exception)

This element specifies the components of the conditional formatting of the referenced table style (if one exists) which shall be applied to the set of table rows with the current table-level property exceptions. A table style can specify up to six different optional conditional formats [*Example*: Different formatting for first column. *end example*], which then can be applied or omitted from individual table rows in the parent table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| firstColumn (First Column) | Specifies that the first column conditional formatting shall be applied to the table. |
| firstRow (First Row) | Specifies that the first row conditional formatting shall be applied to the table. |
| lastColumn (Last Column) | Specifies that the last column conditional formatting shall be applied to the table. |
| lastRow (Last Row) | Specifies that the last row conditional formatting shall be applied to the table. |
| noHBand (No Horizontal Banding) | Specifies that the horizontal banding conditional formatting shall not be applied to the table. |
| noVBand (No Vertical Banding) | Specifies that the vertical banding conditional formatting shall not be applied to the table. |

### tblLook (Table Style Conditional Formatting Settings)

This element specifies the components of the conditional formatting of the referenced table style (if one exists) which shall be applied to the current table. A table style can specify up to six different optional conditional formats [*Example*: Different formatting for first column. *end example*], which then can be applied or omitted from individual tables in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| firstColumn (First Column) | Specifies that the first column conditional formatting shall be applied to the table. |
| firstRow (First Row) | Specifies that the first row conditional formatting shall be applied to the table. |
| lastColumn (Last Column) | Specifies that the last column conditional formatting shall be applied to the table. |
| lastRow (Last Row) | Specifies that the last row conditional formatting shall be applied to the table. |
| noHBand (No Horizontal Banding) | Specifies that the horizontal banding conditional formatting shall not be applied to the table. |
| noVBand (No Vertical Banding) | Specifies that the vertical banding conditional formatting shall not be applied to the table. |

### tblOverlap (Floating Table Allows Other Tables to Overlap)

This element specifies whether the current table shall allow other floating tables to overlap its extents when the tables are displayed in a document. If specified, then no adjustment shall be made to prevent tables whose properties would normally cause them to overlap from overlapping when displayed. If turned off, then the tables shall be adjusted as needed to prevent them from overlapping when displayed by adjusting the floating table properties as needed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Table Overlap Setting) | Specifies whether a floating table shall allow other floating tables in the document to overlap its extents when displayed. |

### tblpPr (Floating Table Positioning)

This element specifies information about the current table with regard to floating tables. *Floating tables* are tables in a document which are not part of the main text flow in the document and are instead absolutely positioned with a specific size and position relative to non-frame content in the current document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bottomFromText (Distance From Bottom of Table to Text) | Specifies the minimum distance which shall be maintained between the current floating table and the top of text in the paragraph which is below this floating table. |
| horzAnchor (Table Horizontal Anchor) | Specifies the base object from which the horizontal positioning in the tblpX and/or tblpXSpec attribute should be calculated. |
| leftFromText (Distance From Left of Table to Text) | Specifies the minimum distance which shall be maintained between the current floating table and the edge of text in the paragraph which is to the left of this floating table. |
| rightFromText ((Distance From Right of Table to Text) | Specifies the minimum distance which shall be maintained between the current floating table and the edge of text in the paragraph which is to the right of this floating table. |
| tblpX (Absolute Horizontal Distance From Anchor) | Specifies an absolute horizontal position for the floating table. This absolute position is specified relative to the horizontal anchor specified by the horzAnchor attribute for this floating table. |
| tblpXSpec (Relative Horizontal Alignment From Anchor) | Specifies a relative horizontal position for the floating table. This relative position is specified relative to the horizontal anchor specified by the horizAnchor attribute for this floating table. |
| tblpY (Absolute Vertical Distance From Anchor) | Specifies an absolute vertical position for the floating table. This absolute position is specified relative to the vertical anchor specified by the vertAnchor attribute for this floating table. |
| tblpYSpec (Relative Vertical Alignment from Anchor) | Specifies a relative vertical position for the floating table. This relative position is specified relative to the vertical anchor specified by the vertAnchor attribute for this floating table. |
| topFromText (Distance From Top of Table to Text) | Specifies the minimum distance which shall be maintained between the current floating table and the bottom edge of text in the paragraph which is above this floating table. |
| vertAnchor (Table Vertical Anchor) | Specifies the base object from which the vertical positioning in the tblpY attribute should be calculated. |

### tblPr (Previous Table Properties)

This element specifies a previous set of table properties, the modifications to which shall be attributed to a revision by a particular author and at a particular time. This element contains the table property settings which were previously in place before a specific set of revisions by one author. These properties affect the appearance of all rows and cells within the parent table but can be overridden by individual table-level exception, row, and cell level properties, as defined by each property.

### tblPr (Table Properties)

This element specifies the set of table-wide properties applied to the current table. These properties affect the appearance of all rows and cells within the parent table but can be overridden by individual table-level exception, row, and cell level properties as defined by each property.

### tblPrEx (Table-Level Property Exceptions)

This element specifies a set of table properties which shall be applied to the contents of this row in place of the table properties specified in the tblPr element.

### tblPrEx (Previous Table-Level Property Exceptions)

This element specifies a previous set of table-level property exceptions, the modifications to which shall be attributed to a revision by a particular author and at a particular time. This element contains the table-level property exceptions which were previously in place before a specific set of revisions by one author.

### tblStyle (Referenced Table Style)

This element specifies the style ID of the table style which shall be used to format the contents of this table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### tblW (Preferred Table Width)

This element specifies the preferred width for this table. This preferred width is used as part of the table layout algorithm specified by the tblLayout element (§17.4.52; §17.4.53) - full description of the algorithm in the ST\_TblLayout simple type (§17.18.87).

### tblW (Preferred Table Width Exception)

This element specifies the preferred width for the parent table row via a set of table-level property exceptions. This preferred width is used as part of the table layout algorithm specified by the tblLayout element (§17.4.52n; §17.4.53) - full description of the algorithm in the ST\_TblLayout simple type (§17.18.87).

### tc (Table Cell)

This element specifies a single cell in a table row, which contains the table’s content. Table cells in WordprocessingML are analogous to HTML td elements.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Table Cell Identifier) | Specifies a unique identifier for the current table cell. This identifier shall be unique within the table and is used to identify this table cell as a header cell for other cells within the table, using the headers child element. |

### tcBorders (Table Cell Borders)

This element specifies the set of borders for the edges of the current table cell, using the eight border types defined by its child elements.

### tcFitText (Fit Text Within Cell)

This element specifies that the contents of the current cell shall have their inter-character spacing increased or reduced as necessary to fit the width of the text extents of the current cell. This setting shall behave identically to placing the contents of this paragraph in a run and using the fitText element (§17.3.2.14), if the width provided on that element matched the width of the current cell.

### tcMar (Single Table Cell Margins)

This element specifies a set of cell margins for a single table cell in the parent table.

### tcPr (Table Cell Properties)

This element specifies the set of properties which shall be applied a specific table cell. Each unique property is specified by a child element of this element. In any instance where there is a conflict between the table level, table-level exception, or row level properties with a corresponding table cell property, these properties shall overwrite the table or row wide properties.

### tcPr (Previous Table Cell Properties)

This element specifies a previous set of table cell properties, the modifications to which shall be attributed to a revision by a particular author and at a particular time. This element contains the table cell property settings which were previously in place before a specific set of revisions by one author. Each unique property is specified by a child element of this element. In any instance where there is a conflict between the table level, table-level exception, or row level properties with a corresponding table cell property, these properties shall overwrite the table or row wide properties.

### tcW (Preferred Table Cell Width)

This element specifies the preferred width for this table cell. This preferred width is used as part of the table layout algorithm specified by the tblLayout element (§17.4.52; §17.4.53) - full description of the algorithm in the ST\_TblLayout simple type (§17.18.87).

### textDirection (Table Cell Text Flow Direction)

This element specifies the direction of the text flow for this table cell.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Direction of Text Flow) | Specifies the direction of the text flow for this object. |

### tl2br (Table Cell Top Left to Bottom Right Diagonal Border)

This element specifies the border which shall be displayed on the top left side to bottom right diagonal within the current table cell.

### top (Table Cell Top Border)

This element specifies the border which shall be displayed at the top of the current table cell. The appearance of this table cell border in the document shall be determined by the following settings:

### top (Table Cell Top Margin Default)

This element specifies the amount of space which shall be left between the top extent of the cell contents and the top border of all table cells within the parent table. This setting can be overridden by the table cell top margin definition specified by the top element contained within the table cell's properties (§17.4.77).

### top (Table Top Border)

This element specifies the border which shall be displayed at the top of the current table. The appearance of this table border in the document shall be determined by the following settings:

### top (Table Cell Top Margin Exception)

This element specifies the amount of space which shall be left between the top extent of the cell contents and the top border of a specific table cell within a table. This setting shall override the table cell top margin definition specified by the top element contained within the table properties (§17.4.75).

### tr (Table Row)

This element specifies a single table row, which contains the table’s cells. Table rows in WordprocessingML are analogous to HTML tr elements.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| rsidDel (Revision Identifier for Table Row Deletion) | Specifies a unique identifier used to track the editing session when the row was deleted from the main document. |
| rsidR (Revision Identifier for Table Row) | Specifies a unique identifier used to track the editing session when the table row was added to the main document. |
| rsidRPr (Revision Identifier for Table Row Glyph Formatting) | Specifies a unique identifier used to track the editing session when the glyph character representing the table row mark was last modified in the main document. |
| rsidTr (Revision Identifier for Table Row Properties) | Specifies a unique identifier used to track the editing session when the table row's properties were last modified in this document. |

### tr2bl (Table Cell Top Right to Bottom Left Diagonal Border)

This element specifies the border which shall be displayed on the top right to bottom left diagonal within the current table cell.

### trHeight (Table Row Height)

This element specifies the height of the current table row within the current table. This height shall be used to determine the resulting height of the table row, which can be absolute or relative (depending on its attribute values).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| hRule (Table Row Height Type) | Specifies the meaning of the height specified for this table row. |
| val (Table Row Height) | Specifies the table row's height. |

### trPr (Table Row Properties)

This element specifies the set of row-level properties applied to the current table row. Each unique property is specified by a child element of this element. These properties affect the appearance of all cells in the current row within the parent table but can be overridden by individual cell-level properties, as defined by each property.

### trPr (Previous Table Row Properties)

This element specifies a previous set of table cell properties, the modifications to which shall be attributed to a revision by a particular author and at a particular time. This element contains the table cell property settings which were previously in place before a specific set of revisions by one author. Each unique property is specified by a child element of this element. These properties affect the appearance of all cells in the current row within the parent table but can be overridden by individual cell-level properties, as defined by each property.

### vAlign (Table Cell Vertical Alignment)

This element specifies the vertical alignment for text within the current table cell. The vertical alignment of this text is determined by the value of the val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Vertical Alignment Setting) | Specifies the vertical alignment for text between the top and bottom margins of the parent container (page or table cell) |

### vMerge (Vertically Merged Cell)

This element specifies that this cell is part of a vertically merged set of cells in a table. The val attribute on this element determines how this cell is defined with respect to the previous cell in the table (i.e., whether this cell continues the vertical merge or starts a new merged group of cells).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Vertical Merge Type) | Specifies how the table cell is part of a vertically merged region. This determines whether the cell should join onto an existing grouping of merged cells if any exist or start a new group of merged cells. Refer to the simple type definition for a full description of each type. |

### wAfter (Preferred Width After Table Row)

This element specifies the preferred width for the total number of grid columns after this table row as specified in the gridAfter element (§17.4.14). This preferred width is used as part of the table layout algorithm specified by the tblLayout element (§17.4.52; §17.4.53) - full description of the algorithm in the ST\_TblLayout simple type (§17.18.87).

### wBefore (Preferred Width Before Table Row)

This element specifies the preferred width for the total number of grid columns before this table row as specified in the gridAfter element (§17.4.14). This preferred width is used as part of the table layout algorithm specified by the tblLayout element (§17.4.52; §17.4.53) - full description of the algorithm in the ST\_TblLayout simple type (§17.18.87).

### Table Measurement (CT\_TblWidth)

This common complex type specifies a measurement to be used within a table. These properties contain two pieces of information:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| type (Table Width Type) | Specifies the units of the width property being defined by the parent element’s w attribute. This property is used to define various properties of a table, including cell spacing, preferred width, and table margins. |
| w (Table Width Value) | Specifies the value of the width property being defined by the parent element. This property is used to define various properties of a table, including cell spacing, preferred widths, and table margins. |

## Custom Markup

Within a WordprocessingML document, semantic information may be supplied beyond the presentation information specified by ECMA-376. [*Example*: An invoice document might wish to specify that a particular sentence of text is a customer name, in order for that information to be easily extracted from the document without the need to parse the text using regular expression matching or similar. *end example*]

### Custom XML and Smart Tags

The first form of extra-standard semantics that can be embedded in a WordprocessingML document is represented by smart tags. Implementations can establish sets of smart tags that allow semantic labels to be added around an arbitrary run or set of runs within a document to provide information about the type of data contained within.

#### attr (Custom XML Attribute)

This element specifies a custom XML attribute which shall be located on the parent custom XML element specified via the customXml element (§17.5.1.4;§17.5.1.5;§17.5.1.3; §17.5.1.6). The uri attribute can specify the Namespace of the custom XML attribute, and the name attribute shall specify the local name of the custom XML attribute. For any set of sibling attr elements, all the pairs of Namespace and local name shall be distinct.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | Specifies the name of the current custom XML attribute or smart tag property. |
| uri (Namespace) | Specifies the namespace URI of the current custom XML attribute or smart tag property. |
| val (Value) | Specifies the value of the current custom XML attribute or smart tag property. |

#### attr (Smart Tag Property)

This element specifies a single smart tag property which shall be located on the parent smart tag, specified via the smartTag element (§17.5.1.9). The attributes on this element shall be used to specify the contents of smart tag property.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | Specifies the name of the current custom XML attribute or smart tag property. |
| uri (Namespace) | Specifies the namespace URI of the current custom XML attribute or smart tag property. |
| val (Value) | Specifies the value of the current custom XML attribute or smart tag property. |

#### customXml (Inline-Level Custom XML Element)

This element specifies the presence of a custom XML element around one or more inline level structures (runs, images, fields, etc.) within a paragraph. The attributes on this element shall be used to specify the name and namespace URI of the current custom XML element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| element (Element name) | Specifies the name of the current custom XML element or smart tag within the document. |
| uri (Custom XML Markup Namespace) | Specifies the namespace URI of the current custom XML element or smart tag. |

#### customXml (Cell-Level Custom XML Element)

This element specifies the presence of a custom XML element around a single table cell. The attributes on this element shall be used to specify the name and namespace URI of the current custom XML element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| element (Custom XML Element Name) | Specifies the name of the current custom XML element or smart tag within the document. |
| uri (Custom XML Element Namespace) | Specifies the namespace URI of the current custom XML element or smart tag. |

#### customXml (Row-Level Custom XML Element)

This element specifies the presence of a custom XML element around a single table row. The attributes on this element shall be used to specify the name and namespace URI of the current custom XML element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| element (Custom XML Element Name) | Specifies the name of the current custom XML element or smart tag within the document. |
| uri (Custom XML Element Namespace) | Specifies the namespace URI of the current custom XML element or smart tag. |

#### customXml (Block-Level Custom XML Element)

This element specifies the presence of a custom XML element around one or more block level structures (paragraphs, tables, etc.). The attributes on this element shall be used to specify the name and namespace URI of the current custom XML element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| element (Custom XML Element Name) | Specifies the name of the current custom XML element or smart tag within the document. |
| uri (Custom XML Element Namespace) | Specifies the namespace URI of the current custom XML element or smart tag. |

#### customXmlPr (Custom XML Element Properties)

This element specifies the set of properties which shall be applied to the parent custom XML element.

#### placeholder (Custom XML Element Placeholder Text)

This element specifies the placeholder text which shall be displayed in place of this custom XML element when the contents of this custom XML markup are empty (i.e. there are no runs of text within the current custom XML element). If this custom XML element does contain run content, then this text shall not be displayed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### smartTag (Inline-Level Smart Tag)

This element specifies the presence of a smart tag around one or more inline structures (runs, images, fields, etc.) within a paragraph. The attributes on this element shall be used to specify the name and namespace URI of the current smart tag.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| element (Smart Tag Name) | Specifies the name of the current custom XML element or smart tag within the document. |
| uri (Smart Tag Namespace) | Specifies the namespace URI of the current custom XML element or smart tag. |

#### smartTagPr (Smart Tag Properties)

This element specifies the set of properties which shall be applied to the parent smart tag.

### Structured Document Tags

The final form of extra-standard semantics that can be embedded in a WordprocessingML document is represented by structured document tags (SDTs).

#### alias (Friendly Name)

This element specifies the friendly name associated with the current structured document tag. The string representing the friendly name shall be stored on this element's val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### bibliography (Bibliography Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be of type bibliography.

#### calendar (Date Picker Calendar Type)

This element specifies the calendar which shall be displayed for the current date picker structured document tag, if a user interface is present for the structured document tag. The calendar information is stored on this element's val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Calendar Type Value) | Specifies a type of calendar, the use of which is determined by the parent XML element. |

#### citation (Citation Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be of type citation.

#### comboBox (Combo Box Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be a combo box when displayed in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lastValue (Combo Box Last Saved Value) | Specifies the value associated with the current display text for the combo box structured document tag. |

#### dataBinding (XML Mapping)

This element specifies the information that shall be used to establish a mapping between the nearest ancestor structured document tag and an XML element stored within a Custom XML Data part in the current WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| prefixMappings (XML Namespace Prefix Mappings) | Specifies the set of prefix mappings which shall be used to interpret the XPath expression specified on the xpath attribute when the XPath expression is evaluated against the custom XML data parts in the current document. |
| storeItemID (Custom XML Data Storage ID) | Specifies the custom XML data identifier for the custom XML data part which shall be used to evaluate the given XPath expression. The *custom XML data identifier* specified using the storeItemID attribute of the dataStoreItem element (§22.5.2.1) on the Custom XML Data Properties part is a string that uniquely identifies a particular custom XML data part in a WordprocessingML document (as multiple parts can have the same namespace for their root element). |
| xpath (XPath) | Specifies the XPath expression that shall be evaluated to find the custom XML node that is mapped to the nearest ancestor structured document tag. This XPath expression shall be specified using the syntax defined in the XML Path Language (XPath) Version 1.0 specification (see Annex A for bibliographic reference information). |

#### date (Date Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be a date picker when displayed in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fullDate (Last Known Date in XML Schema DateTime Format) | Specifies the full date and time last entered into the nearest ancestor structured document tag using the standard XML Schema DateTime syntax. |

#### dateFormat (Date Display Mask)

The element specifies the display format that shall be used to format any date entered into the nearest ancestor structured document tag in full DateTime format [*Example*: Through a user interface (a date picker), or through custom XML data associated with this structured document tag via the dataBinding element (§17.5.2.6). *end example*] before displaying it in the structured document tag's run content.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### docPart (Document Part Reference)

This element specifies the name of the document part that shall be displayed in the nearest ancestor structured document tag when its run contents are empty. If this element is specified, then a document part whose name element (§17.12.12) specifies a name matching the value of this element, and which belongs to the bbPlcHdr style shall be located to be used as the placeholder text for the nearest ancestor structured document tag.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### docPartCategory (Document Part Category Filter)

This element specifies the category of document parts that shall be used as the filter when determining the possible choices of document parts that are displayed for insertion into the nearest ancestor structured document tag. A document part *category* is a sub-classification within a given document part gallery which can be used to further categorize the parts in a given gallery. [*Example*: Gallery custom1 might have categories of Legal Clauses, Conformance Clauses, etc. *end example*]. The category which shall be used as a filter is stored in this element's val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### docPartGallery (Document Part Gallery Filter)

This element specifies the gallery of document parts that shall be used as the filter when determining the possible choices of document parts that are displayed for insertion into the nearest ancestor structured document tag. A document part *gallery* is a classification of document parts, which might then be subdivided into categories. [*Example*: A gallery with a name of custom1 might have categories of Legal Clauses, Conformance Clauses, etc. *end example*]. The gallery which shall be used is stored in this element's val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### docPartList (Document Part Gallery Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be of a document part gallery type.

#### docPartObj (Built-In Document Part Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be of a document part type.

#### docPartUnique (Built-In Document Part)

This element specifies that this structured document tag is being used to encapsulate a built-in document part (i.e. this element appears as a child element of the docPartObj element).

#### dropDownList (Drop-Down List Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be a drop-down list when displayed in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lastValue (Dropdown List Last Saved Value) | Specifies the value associated with the current display text for the drop-down list structured document tag. |

#### equation (Equation Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be of type equation.

#### group (Group Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be a restricted grouping when displayed in the document.

#### id (Unique ID)

This element specifies a unique numerical ID for the nearest ancestor structured document tag. This ID shall be persisted through multiple sessions (i.e. shall not be changed once specified).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contain a decimal number. |

#### label (Structured Document Tag Label)

This element specifies the label identifier associated with the current structured document tag. The identifier representing the label shall be stored on this element’s val attribute and is used to reference the unique identifier value of a structured document tag. The contents of the structured document tag resolved by a specific unique identifier shall be used as the label content for the structured document tag that references that specific unique identifier of the structured document tag. If multiple instances of the label element are present, the labels referenced are ordered from most general to most specific. [*Example*: A form element for specifying country name might reference the label for these three items (in order): “Sender”, “Home Address”, and “Country”. *end example*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contain a decimal number. |

#### lid (Date Picker Language ID)

This element specifies the language ID that shall be used for displaying a calendar for the current date picker structured document tag, if a user interface is present for the structured document tag.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Language Code) | Specifies an identifier for a specific language. |

#### listItem (Combo Box List Item)

This element specifies a single list item within the parent combo box structured document tag. Each list item shall be displayed in the list displayed for the nearest ancestor structured document tag (if a user interface is present).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| displayText (List Entry Display Text) | Specifies the text to display in the run content (as well as any supplied user interface) in place of the value attribute contents for this drop-down list entry. |
| value (List Entry Value) | Specifies the value for the current list item entry. |

#### listItem (Drop-Down List Item)

This element specifies a single list item within the parent drop-down list structured document tag. Each list item shall be displayed in the list displayed for the nearest ancestor structured document tag (if a user interface is present).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| displayText (List Entry Display Text) | Specifies the text to display in the run content (as well as any supplied user interface) in place of the value attribute contents for this drop-down list entry. |
| value (List Entry Value) | Specifies the value for the current list item entry. |

#### lock (Locking Setting)

This element specifies the set of behaviors that shall be applied to the contents of the nearest ancestor structured document tag when the contents of this document are edited by an application (whether through a user interface or directly). The type of locking applied to the structured document tag is specified via the value of the associated val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Locking Type) | Specifies the type of locking which shall be applied to the nearest ancestor structured document tag. |

#### picture (Picture Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be a picture when displayed in the document.

#### placeholder (Structured Document Tag Placeholder Text)

This element specifies the placeholder text which should be displayed when this structured document tag's run contents are empty, the associated mapped XML element is empty as specified via the dataBinding element (§17.5.2.6) or the showingPlcHdr element (§17.5.2.39) is set in the structured document tag's properties. The placeholder text which shall be shown is itself specified via the child element docPart.

#### richText (Rich Text Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be a rich text box when displayed in the document.

#### rPr (Run Properties For Structured Document Tag Contents)

This element specifies the set of run properties that shall be applied to the text entered into the nearest ancestor structured document tag in replacement of placeholder text. When placeholder text is present in a structured document tag, its formatting is often different than the desired underlying formatting, and this element specifies the formatting which shall be used for non-placeholder text contents when they are initially added to the control.

#### rPr (Structured Document Tag End Character Run Properties)

This element specifies the set of run properties which shall be applied to the character present to delimit the end of the structured document tag's contents. When these properties are applied, they shall be applied in addition to the run properties specified for the entire structured document tag via the rPr element (§17.5.2.27) stored in the tag's main property container.

#### sdt (Block-Level Structured Document Tag)

This element specifies the presence of a structured document tag around one or more block-level structures (paragraphs, tables, etc.). The two child elements of this element shall be used to specify the properties and content of the current structured document tag via the sdtPr and sdtContent elements, respectively. [*Example*: Consider a structured document tag with the friendly name address that must be located around a single paragraph in a WordprocessingML document. This requirement would be specified as follows in the WordprocessingML:

#### sdt (Row-Level Structured Document Tag)

This element specifies the presence of a structured document tag around a single table row. The two child elements of this element shall be used to specify the properties and content of the current structured document tag via the sdtPr and sdtContent elements, respectively.

#### sdt (Inline-Level Structured Document Tag)

This element specifies the presence of a structured document tag around one or more inline-level structures (runs, DrawingML objects, fields, etc.) in the current paragraph. The two child elements of this element shall be used to specify the properties and content of the current structured document tag via the sdtPr and sdtContent elements, respectively.

#### sdt (Cell-Level Structured Document Tag)

This element specifies the presence of a structured document tag around a single table cell. The two child elements of this element shall be used to specify the properties and content of the current structured document tag via the sdtPr and sdtContent elements, respectively.

#### sdtContent (Cell-Level Structured Document Tag Content)

This element specifies the last known contents of a structured document tag around a single table cell. This element's contents shall be treated as a cache of the contents to be displayed in the structured document tag for the following reasons:

#### sdtContent (Block-Level Structured Document Tag Content)

This element specifies the last known contents of a structured document tag around one or more block-level structures (paragraphs, tables, etc.). This element's contents shall be treated as a cache of the contents to be displayed in the structured document tag for the following reasons:

#### sdtContent (Row-Level Structured Document Tag Content)

This element specifies the last known content of a structured document tag around a single table row.

#### sdtContent (Inline-Level Structured Document Tag Content)

This element specifies the last known contents of a structured document tag around one or more inline-level structures (runs, DrawingML objects, fields, etc.). This element's contents shall be treated as a cache of the contents to be displayed in the structured document tag for the following reasons:

#### sdtEndPr (Structured Document Tag End Character Properties)

This element specifies the properties which shall be applied to the physical character which delimits the end of a structured document tag.

#### sdtPr (Structured Document Tag Properties)

This element specifies the set of properties that shall be applied to the nearest ancestor structured document tag.

#### showingPlcHdr (Current Contents Are Placeholder Text)

This element specifies whether the content of the sdtContent element (§17.5.2.34; §17.5.2.33; §17.5.2.35; §17.5.2.36) for the nearest ancestor structured document tag shall be interpreted to contain placeholder text for this structured document tag (as opposed to regular text contents within the structured document tag). If this element is present and set to true, this state shall be resumed (showing placeholder text) upon opening this document.

#### storeMappedDataAs (Custom XML Data Date Storage Format)

This element specifies the translation which shall be performed on the displayed date in a date picker structured document tag when the current contents are saved into the associated custom XML data via the dataBinding element (§17.5.2.6).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Date Storage Type) | Specifies the date translation which shall be applied to the parent date picker structured document tag. |

#### tabIndex (Structured Document Tag Navigation Order Index)

This element specifies the position of the current structured document tag in the navigation (tab) order used in the document. The index shall be stored on this element’s val attribute and is analogous to the tabIndex attribute in HTML.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Positive Decimal Number Value) | Specifies that the contents of this attribute contain a positive decimal number. |

#### tag (Programmatic Tag)

This element specifies a programmatic tag associated with the current structured document tag. A *programmatic tag* is an arbitrary string which applications can associate with a structured document tag in order to identify it without providing a visible friendly name. The string representing the programmatic tag shall be stored on this element's val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### temporary (Remove Structured Document Tag When Contents Are Edited)

This element specifies whether the nearest ancestor structured document tag shall be removed from the WordprocessingML document when its contents are modified.

#### text (Plain Text Structured Document Tag)

This element specifies that the nearest ancestor structured document tag shall be a plain text box when displayed in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| multiLine (Allow Soft Line Breaks) | Specifies whether soft line breaks can be added to the contents of this structured document tag when this document is modified. This setting shall not affect the ability of the structured document tag to display existing soft line breaks (which shall be preserved) and shall only affect the ability to add line breaks when the document is modified by an application. |

## Sections

WordprocessingML does not natively store the concept of pages, since it is based on paragraphs and runs (which are laid out on to pages by consumers of this content). However, although there is no concept of storing pages in the WordprocessingML format, it is often necessary to store information about a page or group of pages in a document, in order to store information that is to be used to format the pages on which a set of paragraphs appear. In WordprocessingML, this information is stored via the use of *sections*.

### bidi (Right to Left Section Layout)

This element specifies that this section shall be presented using a right-to-left page direction. This property only affects section-level properties and does not affect the layout of text within the contents of this section.

### bottom (Bottom Border)

This element specifies the presentation and display of the page border displayed at the bottom of each page in this section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bottomLeft (Custom Defined Bottom Left Border Relationship Reference) | Specifies the relationship ID for the relationship which contains the custom bottom left border image for the parent element. This custom border image is contained in a separate part within the WordprocessingML package. |
| bottomRight (Custom Defined Bottom Right Border Relationship Reference) | Specifies the relationship ID for the relationship which contains the custom bottom right border image for the parent element. This custom border image is contained in a separate part within the WordprocessingML package. |
| color (Border Color) | Specifies the color for this border. |
| frame (Create Frame Effect) | Specifies whether the specified border should be modified to create a frame effect by reversing the border's appearance from the edge nearest the text to the edge furthest from the text. |
| id (Custom Defined Border Relationship Reference) | Specifies the relationship ID for the relationship which contains the custom border image for the parent element. This custom border image is contained in a separate part within the WordprocessingML package. |
| shadow (Border Shadow) | Specifies whether this border should be modified to create the appearance of a shadow. |
| space (Border Spacing Measurement) | Specifies the spacing offset that shall be used to place this border on the parent object. |
| sz (Border Width) | Specifies the width of the current border. |
| themeColor (Border Theme Color) | Specifies the base theme color used to generate the border color. The border color is the RGB value associated with themeColor as further transformed by themeTint or themeShade (if one is present), else the background color is the RGB value associated with themeColor. |
| themeShade (Border Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this border instance. If the themeColor attribute is not present, then this attribute shall not be used. |
| themeTint (Border Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this border instance. If the themeColor attribute is not present, then this attribute shall not be used. |
| val (Border Style) | Specifies the style of border used on this object. |

### col (Single Column Definition)

This element specifies the properties for a single column of text within this section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| space (Space Before Following Column) | Specifies the spacing (in twentieths of a point) between the current column and the next column. |
| w (Column Width) | Specifies the width (in twentieths of a point) of this text column. |

### cols (Column Definitions)

This element specifies the set of columns defined for this section in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| equalWidth (Equal Column Widths) | Specifies whether all text columns in the current section are of equal width. |
| num (Number of Equal Width Columns) | Specifies the number of text columns in the current section. |
| sep (Draw Line Between Columns) | Specifies if a vertical line is drawn between each of the text columns in this section. |
| space (Spacing Between Equal Width Columns) | Specifies the spacing between text columns in the current section. |

### docGrid (Document Grid)

This element specifies the settings for the document grid, which enables precise layout of full-width East Asian language characters within a document by specifying the desired number of characters per line and lines per page for all East Asian text content in this section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| charSpace (Document Grid Character Pitch) | Specifies the number of characters to be allowed on the document grid for each line in this section. |
| linePitch (Document Grid Line Pitch) | Specifies the number of lines to be allowed on the document grid for the current page assuming all lines have equal line pitch applied to them. This line pitch shall not be added to any line which appears within a table cell unless the adjustLineHeightInTable element (§17.15.3.1) is present in the document's compatibility settings. |
| type (Document Grid Type) | Specifies the style of the current document grid, which defines the grid behavior. |

### formProt (Only Allow Editing of Form Fields)

This element specifies that the contents of the current section shall be protected such that they cannot be edited by a user (if the consumer is displaying the document and allowing the user to make modification) except for the text contained in any form field or embedded control that is part of the current section.

### left (Left Border)

This element specifies the presentation and display of the page border displayed at the left of each page in this section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| color (Border Color) | Specifies the color for this border. |
| frame (Create Frame Effect) | Specifies whether the specified border should be modified to create a frame effect by reversing the border's appearance from the edge nearest the text to the edge furthest from the text. |
| id (Custom Defined Border Relationship Reference) | Specifies the relationship ID for the relationship which contains the custom border image for the parent element. This custom border image is contained in a separate part within the WordprocessingML package. |
| shadow (Border Shadow) | Specifies whether this border should be modified to create the appearance of a shadow. |
| space (Border Spacing Measurement) | Specifies the spacing offset that shall be used to place this border on the parent object. |
| sz (Border Width) | Specifies the width of the current border. |
| themeColor (Border Theme Color) | Specifies the base theme color used to generate the border color. The border color is the RGB value associated with themeColor as further transformed by themeTint or themeShade (if one is present), else the background color is the RGB value associated with themeColor. |
| themeShade (Border Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this border instance. If the themeColor attribute is not present, then this attribute shall not be used. |
| themeTint (Border Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this border instance. If the themeColor attribute is not present, then this attribute shall not be used. |
| val (Border Style) | Specifies the style of border used on this object. |

### lnNumType (Line Numbering Settings)

This element specifies the settings for line numbering to be displayed before each column of text in this section in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| countBy (Line Number Increments to Display) | Specifies the line number increments to be displayed in the current document. |
| distance (Distance Between Text and Line Numbering) | Specifies the distance between the text margin and the edge of any line numbers appearing in that section. |
| restart (Line Numbering Restart Setting) | Specifies when the line numbering in this section shall be reset to the line number specified by the start attribute's value. |
| start (Line Numbering Starting Value) | Specifies the starting value used for the first line whenever the line numbering is restarted by use of the restart attribute. |

### paperSrc (Paper Source Information)

This element specifies printer-specific settings for the printer tray(s) that shall be used to print different pages in this section in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| first (First Page Printer Tray Code) | Specifies a printer-specific code that uniquely identifies a specific printer tray to be used to print the first page of this section in the document. |
| other (Non-First Page Printer Tray Code) | Specifies a printer-specific code that uniquely identifies a specific printer tray to be used to print the each subsequent (non-first) page of this section in the document. |

### pgBorders (Page Borders)

This element specifies the page borders for each page in this section. Each child element of the pgBorders element specifies a specific of border (left, right, bottom, or top).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| display (Pages to Display Page Borders) | Specifies the pages in this section on which the page border shall be printed. |
| offsetFrom (Page Border Positioning) | Specifies how the relative positioning of the page borders shall be calculated. |
| zOrder (Z-Ordering of Page Border) | Specifies whether the page border is positioned above or below intersecting texts and objects in this document. |

### pgMar (Page Margins)

This element specifies the page margins for all pages in this section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bottom (Page Bottom Spacing) | Specifies the distance (in twentieths of a point) between the bottom of the text margins for the main document and the bottom of the page for all pages in this section. |
| footer (Spacing to Bottom of Footer) | Specifies the distance (in twentieths of a point) from the bottom edge of the page to the bottom edge of the footer. |
| gutter (Page Gutter Spacing) | Specifies the page gutter for each page in the current section. |
| header (Spacing to Top of Header) | Specifies the distance (in twentieths of a point) from the top edge of the page to the top edge of the header. |
| left (Left Margin Spacing) | Specifies the distance (in twentieths of a point) between the left edge of the page and the left edge of the text extents for this document. |
| right (Right Margin Spacing) | Specifies the distance (in twentieths of a point) between the right edge of the page and the right edge of the text extents for this document. |
| top (Top Margin Spacing) | Specifies the distance (in twentieths of a point) between the top of the text margins for the main document and the top of the page for all pages in this section. |

### pgNumType (Page Numbering Settings)

This element specifies the page numbering settings for all page numbers that appear in the contents of the current section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| chapSep (Chapter Separator Character) | Specifies the separator character that shall appear between the chapter and page number, if a chapter style has been set for page numbers in this section. |
| chapStyle (Chapter Heading Style) | Specifies the one-based index of the heading style applied to chapter titles in the document which shall be used as chapter headings in all page numbers for this section, by locating the nearest heading of that style and extracting the numbering information. |
| fmt (Page Number Format) | Specifies the number format that shall be used for all page numbering in this section. |
| start (Starting Page Number) | Specifies the page number that appears on the first page of the section. |

### pgSz (Page Size)

This element specifies the properties (size and orientation) for all pages in the current section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| code (Printer Paper Code) | Specifies an optional value which can be used to store an identifier for the current paper size. |
| h (Page Height) | Specifies the height (in twentieths of a point) for all pages in the current section. |
| orient (Page Orientation) | Specifies the orientation of all pages in this section. |
| w (Page Width) | This attribute indicates the width (in twentieths of a point) for all pages in the current section. |

### printerSettings (Reference to Printer Settings Data)

This element specifies an explicit relationship to a Printer Settings part containing information about the printer settings used for this section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

### right (Right Border)

This element specifies the presentation and display of the page border displayed at the right of each page in this section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| color (Border Color) | Specifies the color for this border. |
| frame (Create Frame Effect) | Specifies whether the specified border should be modified to create a frame effect by reversing the border's appearance from the edge nearest the text to the edge furthest from the text. |
| id (Custom Defined Border Relationship Reference) | Specifies the relationship ID for the relationship which contains the custom border image for the parent element. This custom border image is contained in a separate part within the WordprocessingML package. |
| shadow (Border Shadow) | Specifies whether this border should be modified to create the appearance of a shadow. |
| space (Border Spacing Measurement) | Specifies the spacing offset that shall be used to place this border on the parent object. |
| sz (Border Width) | Specifies the width of the current border. |
| themeColor (Border Theme Color) | Specifies the base theme color used to generate the border color. The border color is the RGB value associated with themeColor as further transformed by themeTint or themeShade (if one is present), else the background color is the RGB value associated with themeColor. |
| themeShade (Border Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this border instance. If the themeColor attribute is not present, then this attribute shall not be used. |
| themeTint (Border Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this border instance. If the themeColor attribute is not present, then this attribute shall not be used. |
| val (Border Style) | Specifies the style of border used on this object. |

### rtlGutter (Gutter on Right Side of Page)

This element specifies that the page gutter shall be placed on the right side of the page for this section only. The *page gutter* defines the amount of extra space added to the specified margin, above any existing margin values. [*Note*: This setting is typically used when a document is being created for binding, in order to ensure that the resulting margins are present after the binding gutter is consumed by the printed matter binding. *end note*]

### sectPr (Document Final Section Properties)

This element defines the section properties for the final section of the document. [*Note*: For any other section the properties are stored as a child element of the paragraph element corresponding to the last paragraph in the given section. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| rsidDel (Section Deletion Revision ID) | Specifies a unique identifier used to track the *editing session* when the section mark for this section was deleted from the document. |
| rsidR (Section Addition Revision ID) | Specifies a unique identifier used to track the *editing session* when the section mark for this section was added to the document. |
| rsidRPr (Physical Section Mark Character Revision ID) | Specifies a unique identifier used to track the editing session when the physical character representing this section mark was last formatted. |
| rsidSect (Section Properties Revision ID) | Specifies a unique identifier used to track the editing session when the physical character representing this section mark was last formatted. |

### sectPr (Section Properties)

This element defines the section properties for the section of the document. [*Note*: For the last section in the document, the section properties are stored as a child element of the body element. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| rsidDel (Section Deletion Revision ID) | Specifies a unique identifier used to track the *editing session* when the section mark for this section was deleted from the document. |
| rsidR (Section Addition Revision ID) | Specifies a unique identifier used to track the *editing session* when the section mark for this section was added to the document. |
| rsidRPr (Physical Section Mark Character Revision ID) | Specifies a unique identifier used to track the editing session when the physical character representing this section mark was last formatted. |
| rsidSect (Section Properties Revision ID) | Specifies a unique identifier used to track the editing session when the physical character representing this section mark was last formatted. |

### sectPr (Previous Section Properties)

When specified as a child element of sectPrChange, the sectPr element specifies a set of section properties that were modified when the document was set to track all revisions.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| rsidDel (Section Deletion Revision ID) | Specifies a unique identifier used to track the *editing session* when the section mark for this section was deleted from the document. |
| rsidR (Section Addition Revision ID) | Specifies a unique identifier used to track the *editing session* when the section mark for this section was added to the document. |
| rsidRPr (Physical Section Mark Character Revision ID) | Specifies a unique identifier used to track the editing session when the physical character representing this section mark was last formatted. |
| rsidSect (Section Properties Revision ID) | Specifies a unique identifier used to track the editing session when the physical character representing this section mark was last formatted. |

### textDirection (Text Flow Direction)

This element specifies the direction of the text flow for this section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Direction of Text Flow) | Specifies the direction of the text flow for this object. |

### top (Top Border)

This element specifies the presentation and display of the page border displayed at the top of each page in this section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| color (Border Color) | Specifies the color for this border. |
| frame (Create Frame Effect) | Specifies whether the specified border should be modified to create a frame effect by reversing the border's appearance from the edge nearest the text to the edge furthest from the text. |
| id (Custom Defined Border Relationship Reference) | Specifies the relationship ID for the relationship which contains the custom border image for the parent element. This custom border image is contained in a separate part within the WordprocessingML package. |
| shadow (Border Shadow) | Specifies whether this border should be modified to create the appearance of a shadow. |
| space (Border Spacing Measurement) | Specifies the spacing offset that shall be used to place this border on the parent object. |
| sz (Border Width) | Specifies the width of the current border. |
| themeColor (Border Theme Color) | Specifies the base theme color used to generate the border color. The border color is the RGB value associated with themeColor as further transformed by themeTint or themeShade (if one is present), else the background color is the RGB value associated with themeColor. |
| themeShade (Border Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this border instance. If the themeColor attribute is not present, then this attribute shall not be used. |
| themeTint (Border Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this border instance. If the themeColor attribute is not present, then this attribute shall not be used. |
| topLeft (Custom Defined Top Left Border Relationship Reference) | Specifies the relationship ID for the relationship which contains the custom top left border image for the parent element. This custom border image is contained in a separate part within the WordprocessingML package. |
| topRight (Custom Defined Top Right Border Relationship Reference) | Specifies the relationship ID for the relationship which contains the custom top right border image for the parent element. This custom border image is contained in a separate part within the WordprocessingML package. |
| val (Border Style) | Specifies the style of border used on this object. |

### type (Section Type)

This element specifies the section type of the current section. The section type specifies how the contents of the current section shall be placed relative to the previous section.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Section Type Setting) | Specifies the section type of the current section. |

### vAlign (Vertical Text Alignment on Page)

This element specifies the vertical alignment for text on pages in the current section, relative to the top and bottom margins in the main document story on each page.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Vertical Alignment Setting) | Specifies the vertical alignment for text between the top and bottom margins of the parent container (page or table cell). |

## Styles

Within a WordprocessingML file, *styles* are predefined sets of table, numbering, paragraph, and/or character properties which can be applied to text within the document. This allows the formatting properties to be stored and managed independently from the content, allowing the look of document content to be changed in a single location (e.g. the look of all first-level headings is changed by changing the style with styleId Heading1 rather than looking for and changing each paragraph in the document).

### Style Inheritance

In order to compile the complete set of paragraph and character properties specified by any given style (as appropriate), a consumer shall follow the rule of style inheritance to determine each property in that set.

### Style Hierarchy

With the various flavors of styles available (see each of the subclauses below), multiple style types can be applied to the same content within a file, which means that properties shall be applied in a specific deterministic order. As with inheritance, the resulting formatting properties set by one style type can be unchanged, removed, or altered by following style types.

### Toggle Properties

Certain character properties defined in §17.3.2 are specified as toggle properties. [*Example*: the Bold and Italics properties are toggle properties. *end example*] As indicated in the previous two sections (§17.7.1 and §17.7.2) several styles can affect the formatting applied to a given piece of content within a WordprocessingML document. When the same formatting property appears in one or more styles that affect the content applied to a run, the combined effect depends on whether or not the formatting property is a toggle property.

### General Style Properties

General style properties refer to the set of properties which can be used regardless of the type of style. [*Example*: Within a style definition the style name, additional aliases for the style, a style ID (used by the document content to refer to the style), if style is hidden, if style is locked, etc. are general style properties. *end example*]

#### aliases (Alternate Style Names)

This element specifies the set of alternative names for the parent style definition. These names can be used in an application's user interface as desired. The alternate names shall be stored in this element's val attribute, and each name shall be separated by one or more consecutive comma characters (Unicode character value 002C). All present commas shall be interpreted as separator character and never as part of an alternate style name.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### autoRedefine (Automatically Merge User Formatting Into Style Definition)

This element specifies whether an application shall automatically modify this style when the contents of an entire paragraph in the document with this style applied are modified, ensuring that although only a single instance of text with this style was modified, that change is stored on the style and therefore propagated to all locations where the style is in use.

#### basedOn (Parent Style ID)

This element specifies the style ID of the parent style from which this style inherits in the style inheritance. The *style inheritance* refers to a set of styles which inherit from one another to produce the resulting set of properties for a single style. The val attribute of this element specifies the styleId attribute for the parent style in the style inheritance.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### hidden (Hide Style From User Interface)

This element specifies whether this style shall be hidden from any and all user interfaces when this document is loaded by an application. If this element is set, then this style can be used to format content (i.e. any content which references this style shall have its properties as normal), but the style shall be hidden from all user interface associated with that application. [*Note*: This setting is typically used to hide styles which are being used internally by an application which should not be used as formatting in a typical case. *end note*]

#### latentStyles (Latent Style Information)

This element specifies the properties which shall be applied to a set of latent styles for this document. *Latent styles* refer to any set of style definitions known to an application which have not been included in the current document. [*Example*: Latent styles can include additional styles known by a particular hosting application. *end example*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| count (Latent Style Count) | Specifies the number of known styles which shall be initialized to the current latent style defaults when this document is first processed. [*Note*: This property can be used by an application as needed to ensure that only the number of styles known when this document was created are initialized with the defaults on the parent element, and that all new known styles use their default values. *end note*] |
| defLockedState (Default Style Locking Setting) | Specifies the default setting for the locked element (§17.7.4.7) which shall be applied to any style made available by the hosting application which is not explicitly defined in the current document. This setting shall be overridden for every style for which a latent style exception (§17.7.4.8) exists. |
| defQFormat (Default Primary Style Setting) | Specifies the default setting for the qFormat element (§17.7.4.14) which shall be applied to any style made available by the hosting application which is not explicitly defined in the current document. This setting shall be overridden for every style for which a latent style exception (§17.7.4.8) exists. |
| defSemiHidden (Default Semi-Hidden Setting) | Specifies the default setting for the semiHidden element (§17.7.4.16) which shall be applied to any style made available by the hosting application which is not explicitly defined in the current document. This setting shall be overridden for every style for which a latent style exception (§17.7.4.8) exists. |
| defUIPriority (Default User Interface Priority Setting) | Specifies the default setting for the uiPriority element (§17.7.4.19) which shall be applied to any style made available by the hosting application which is not explicitly defined in the current document. This setting shall be overridden for every style for |
| defUnhideWhenUsed (Default Hidden Until Used Setting) | Specifies the default setting for the unhideWhenUsed element (§17.7.4.20) which shall be applied to any style made available by the hosting application which is not explicitly defined in the current document. This setting shall be overridden for every style for which a latent style exception (§17.7.4.8) exists. |

#### link (Linked Style Reference)

This element specifies the pairing of styles which comprise a linked style. A *linked style* is a grouping of a paragraph style and character style which is used in a user interface to allow the same set of formatting properties to be applied:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### locked (Style Cannot Be Applied)

This element specifies whether an application shall prevent the use of this style when this document is loaded and/or modified. If this element is set, then this style can be used to format existing content (i.e. any content which references this style shall have its properties as normal), but new instances of the style shall be prevented from being applied via all mechanisms associated with that application.

#### lsdException (Latent Style Exception)

This element specifies the properties which shall be applied a single latent style for this document. *Latent styles* refer to any set of known style definitions which have not been included in the current document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| locked (Latent Style Locking Setting) | Specifies the default setting for the locked element (§17.7.4.7) which shall be applied to the latent style with the matching style name value. |
| name (Primary Style Name) | Specifies the primary name for the style which shall inherit this set of latent style property exceptions. |
| qFormat (Latent Style Primary Style Setting) | Specifies the default setting for the qFormat element (§17.7.4.14) which shall be applied to the latent style with the matching style name value. |
| semiHidden (Semi hidden text override) | Specifies the default setting for the semiHidden element (§17.7.4.16) which shall be applied to the latent style with the matching style name value. |
| uiPriority (Override default sorting order) | Specifies the default setting for the uiPriority element (§17.7.4.19) which shall be applied to the latent style with the matching style name value. |
| unhideWhenUsed (Unhide when used) | Specifies the default setting for the unhideWhenUsed element (§17.7.4.20) which shall be applied to the latent style with the matching style name value. |

#### name (Primary Style Name)

This element specifies the primary name for the current style in the document. This name can be used in an application's user interface as desired. The actual primary name for this style is stored in its val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### next (Style For Next Paragraph)

This element specifies the style which shall automatically be applied to a new paragraph created following a paragraph with the parent paragraph style applied. [*Note*: This setting is typically used when the use of the current style is limited to one paragraph at most, and it would typically be undesirable to apply this style to following paragraphs - for example, a title style might specify that its following paragraphs must return to regular text formatting. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### personal (E-Mail Message Text Style)

This element specifies that the parent style, when in use in the context of an e-mail message, was used by default to format all message text from one or more users. [*Note*: This setting does not provide any additional semantic about the style but can be used in the context of e-mail to automatically reformat the contents of the e-mail message while ignoring any content to which styles were deliberately applied (since this style was implicitly applied to message text without user interaction). *end note*]

#### personalCompose (E-Mail Message Composition Style)

This element specifies that the parent style, when in use in the context of an e-mail message, can be used by default to format new message text within the e-mail message. [*Note*: This setting does not provide any additional semantic about the style but can be used in the context of e-mail to automatically format the contents of new test in the e-mail message. *end note*]

#### personalReply (E-Mail Message Reply Style)

This element specifies that the parent style, when in use in the context of an e-mail message, can be used by default to format existing message text within the e-mail message when a new reply is generated. [*Note*: This setting does not provide any additional semantic about the style but can be used in the context of e-mail to automatically format the contents of existing test in the e-mail message. *end note*]

#### qFormat (Primary Style)

This element specifies whether this style shall be treated as a primary style when this document is loaded by an application. If this element is set, then this style has been designated as being particularly important for the current document, and this information can be used by an application in any means desired. [*Note*: This setting does not imply any behavior for the style, only that the style is of particular significance for this document. *end note*]

#### rsid (Revision Identifier for Style Definition)

This element specifies a unique four digit number which shall be used to determine the editing session in which this style definition was last modified. This value shall follow this following constraint: All document elements which specify the same rsid\* values shall correspond to changes made during the same editing session. An *editing session* is defined as the period of editing which takes place between any two subsequent save actions. [*Note*: This setting does not imply any behavior for the style, only that the style was last modified during one particular editing session. This information can be interpreted by an application in any manner desired. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Long Hexadecimal Number Value) | Specifies a number value specified as a four digit hexadecimal number), whose contents of this decimal number are interpreted based on the context of the parent XML element. |

#### semiHidden (Hide Style From Main User Interface)

This element specifies whether this style shall be hidden from the main user interface when this document is loaded by an application. If this element is set, then this style can be used to format content (i.e. any content which references this style shall have its properties as normal), but the style shall be hidden from the main user interface associated with that application.

#### style (Style Definition)

This element specifies the definition of a single style within a WordprocessingML document. A *style* is a predefined set of table, numbering, paragraph, and/or character properties which can be applied to regions within a document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| customStyle (User-Defined Style) | Specifies that this style is a user-defined style (i.e. it is not a style which was automatically generated by an application). This setting (specifically a value of true or its equivalents) shall not allow the formatting associated with the style to be changed automatically by an application but can be used to specify that if the associated style ID is known, certain user interface behaviors can be applied to its definition. [*Example*: The style's primary name can be localized to match the current user interface language. *end example*] |
| default (Default Style) | Specifies that this style is the default for this style type. |
| styleId (Style ID) | Specifies a unique identifier for the parent style definition. This identifier shall be used in multiple contexts to uniquely reference this style definition within the document. |
| type (Style Type) | Specifies the type of style definition defined by this element. WordprocessingML supports six types of style definitions: |

#### styles (Style Definitions)

This element specifies all of the style information stored in the WordprocessingML document: style definitions as well as latent style information.

#### uiPriority (Optional User Interface Sorting Order)

This element specifies a number which can be used to sort the set of style definitions in a user interface when this document is loaded by an application and the recommended setting is specified in the stylePaneSortMethod element (§17.15.1.86). If this element is set, then this priority shall be used to sort all available styles in ascending value order.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

#### unhideWhenUsed (Remove Semi-Hidden Property When Style Is Used)

This element specifies whether the semiHidden property (§17.7.4.16) shall be removed when this style is used by the content of the document. If this element is set, then an application shall ensure that even if the semiHidden element is specified on a style, that this property is removed when the document is resaved if the style is referenced by any content in the document.

### Document Defaults

The first formatting information which is applied to all regions of text in a WordprocessingML document when that document is displayed is the document defaults. The document defaults specify the default set of properties which shall be inherited by every paragraph and run of text within all stories of the current

#### docDefaults (Document Default Paragraph and Run Properties)

This element specifies the set of default paragraph and run properties which shall be applied to every paragraph and run in the current WordprocessingML document. These properties are applied first in the style hierarchy; therefore they are superseded by any further conflicting formatting but apply if no further formatting is present.

#### pPr (Paragraph Properties)

This element specifies the set of paragraph properties which comprise the default paragraph properties for the current WordprocessingML document. [*Rationale*: The reason that a pPr element is present within the pPrDefault element is to allow for easy repurposing of any set of paragraph properties within a WordprocessingML document - since the paragraph properties are always child elements of a single pPr element, that element can simply be relocated in its entirety to the desired new location without additional modifications. *end rationale*]

#### pPrDefault (Default Paragraph Properties)

This element specifies the presence of a set of default paragraph properties for the current document. The actual paragraph properties are stored within the pPr child element of the current element.

#### rPr (Run Properties)

This element specifies the set of run properties which comprise the default run properties for the current WordprocessingML document. [*Rationale*: The reason that an rPr element is present within the rPrDefault element is to allow for easy repurposing of any set of run properties within a WordprocessingML document - since the run properties are always child elements of a single rPr element, that element can simply be relocated in its entirety to the desired new location without additional modifications. *end rationale*]

#### rPrDefault (Default Run Properties)

This element specifies the presence of a set of default run properties for the current document. The actual run properties are stored within the rPr child element of the current element.

### Table Styles

*Table styles* are style definitions which apply to the contents of zero or more tables within a document. This definition can imply that the style can only define table properties (properties which apply to the table and its constituent rows and cells), however a table style can also define paragraph properties (properties which apply to the positioning and appearance of paragraphs) as well as character properties (properties which apply to runs) for all of the paragraphs and runs within the specified table in the document.

#### pPr (Table Style Conditional Formatting Paragraph Properties)

This element specifies the set of paragraph properties which shall be applied to all paragraphs within a table which match the conditional formatting type specified on the parent tblStylePr element. These properties are applied in the order specified via the style hierarchy.

#### rPr (Table Style Conditional Formatting Run Properties)

This element specifies the set of run properties which shall be applied to all runs within a table which match the conditional formatting type specified on the parent tblStylePr element. These properties are applied in the order specified via the style hierarchy.

#### tblPr (Table Style Conditional Formatting Table Properties)

This element specifies the set of table properties which shall be applied to all regions within a table which match the conditional formatting type specified on the parent tblStylePr element. These properties are applied in the order specified via the style hierarchy.

#### tblPr (Style Table Properties)

This element specifies the set of table properties which shall be applied to the table. These properties are not conditional and shall always be applied (although they are applied before all conditional formatting properties).

#### tblStyleColBandSize (Number of Columns in Column Band)

This element specifies the number of columns which shall comprise each a table style column band for this table style. This element determines how many columns constitute each of the column bands for the current table, allowing column band formatting to be applied to groups of columns (rather than just single alternating columns) when the table is formatted.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

#### tblStylePr (Style Conditional Table Formatting Properties)

This element specifies a set of formatting properties which shall be conditionally applied to the parts of a table which match the requirement specified on the type attribute. These table conditional formats are applied to different regions of the table as follows:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| type (Table Style Conditional Formatting Type) | Specifies the section of the table to which the current conditional formatting properties shall be applied. |

#### tblStyleRowBandSize (Number of Rows in Row Band)

This element specifies the number of rows which shall comprise each a table style row band for this table style. This element determines how many rows constitute each of the row bands for the current table, allowing row band formatting to be applied to groups of rows (rather than just single alternating rows) when the table is formatted.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

#### tcPr (Table Style Conditional Formatting Table Cell Properties)

This element specifies the set of table cell properties which shall be applied to all regions within a table which match the conditional formatting type specified on the parent tblStylePr element. These properties are applied in the order specified via the style hierarchy.

#### tcPr (Style Table Cell Properties)

This element specifies the set of table cell properties which shall be applied to the table. These properties are not conditional and shall always be applied (although they are applied before all conditional formatting properties).

#### trPr (Table Style Conditional Formatting Table Row Properties)

This element specifies the set of table row properties which shall be applied to all rows within a table which match the conditional formatting type specified on the parent tblStylePr element. These properties are applied in the order specified via the style hierarchy.

#### trPr (Style Table Row Properties)

This element specifies the set of table row properties which shall be applied to the table. These properties are not conditional and shall always be applied (although they are applied before all conditional formatting properties).

### Numbering Styles

*Numbering styles* are style definitions which specify common style properties for a multi-level numbering format within a document. This means that a numbering style defines only a single paragraph property: a reference to a numbering definition stored in the document’s numbering part, using the numPr element.

### Paragraph Styles

*Paragraph styles* are styles which apply to the contents of an entire paragraph as well as the paragraph mark. This definition implies that the style can define both character properties (properties which apply to text within the document) as well as paragraph properties (properties which apply to the positioning and appearance of the paragraph). Paragraph styles cannot be referenced by runs within a document; they shall be referenced by the pStyle element (§17.3.1.27) within a paragraph’s paragraph properties element.

#### Numbering in Paragraph Styles

When a paragraph style references a numbering definition and level which shall also be applied, that reference shall be done in a way slightly different from the typical numbering reference as follows:

#### pPr (Style Paragraph Properties)

This element specifies the set of paragraph properties which shall be applied to the paragraph.

### Run (Character) Styles

*Character styles* are styles which apply to the contents of one or more runs of text within a document’s contents. This definition implies that the style can only define character properties (properties which apply to text within a paragraph) because it cannot be applied to paragraphs. Character styles can only be referenced by runs within a document, and they shall be referenced by the rStyle element within a run’s run properties element.

#### rPr (Run Properties)

This element specifies the set of run properties which shall be applied to the run.

## Fonts

The next component of a WordprocessingML document is storing information about the fonts used in the document. WordprocessingML stores two pieces of information about fonts:

### Font Embedding

Within a WordprocessingML document, *font embedding* refers to a process in which the some or all of the fonts used in the current document are included in that document such that it can be guaranteed that they are available for use when the document is subsequently opened.

### Font Substitution

The rFonts element (§17.3.2.26) references the font which is applied to each run of text within a WordprocessingML document. However, based on the availability of these fonts (for example, the use of a custom font), an application might not be able to locate the specified font. The process of finding a suitable alternative font is known as *font substitution*.

### Elements

The following elements comprise the content of the font table:

#### altName (Alternate Names for Font)

This element specifies a set of alternative names which can be used to locate the font specified by the parent element. This set of alternative names is stored in a comma-delimited list, with all adjacent commas ignored (i.e. a value of Name A, Name B is equivalent to Name A,,,,,,,,, Name B).

|  |  |
| --- | --- |
| Attributes | Description |
| val (String Value) | Specifies that its contents contain a string. |

#### charset (Character Set Supported By Font)

This element specifies the character set which is supported by the parent font. This information can be used as defined in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available.

|  |  |
| --- | --- |
| Attributes | Description |
| characterSet (IANA Name of Character Set) | Name of the character set associated with the font. The values allowed by this attribute are defined by the names and aliases listed in the IANA registration table. |

#### embedBold (Bold Style Font Style Embedding)

This element specifies information about the embedded font storage for the bold form of a font when it is embedded. This form is used when bold is applied to a text run.

|  |  |
| --- | --- |
| Attributes | Description |
| fontKey (Embedded Font Obfuscation Key) | Specifies the key which was used to obfuscate this embedded font. This key can be used to retrieve the embedded font for the purposes of viewing this WordprocessingML document only, using the algorithm described in §17.8.1. |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |
| subsetted (Embedded Font Is Subsetted) | Specifies that the embedded font targeted by the id attribute has been subsetted. |

#### embedBoldItalic (Bold Italic Font Style Embedding)

This element specifies information about the embedded font storage for the bold italic form of a font when it is embedded. This form is used when bold and italics are applied to a text run.

|  |  |
| --- | --- |
| Attributes | Description |
| fontKey (Embedded Font Obfuscation Key) | Specifies the key which was used to obfuscate this embedded font. This key can be used to retrieve the embedded font for the purposes of viewing this WordprocessingML document only, using the algorithm described in §17.8.1. |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |
| subsetted (Embedded Font Is Subsetted) | Specifies that the embedded font targeted by the id attribute has been subsetted. |

#### embedItalic (Italic Font Style Embedding)

This element specifies information about the embedded font storage for the italic form of a font when it is embedded. This form is used when italics are applied to a text run.

|  |  |
| --- | --- |
| Attributes | Description |
| fontKey (Embedded Font Obfuscation Key) | Specifies the key which was used to obfuscate this embedded font. This key can be used to retrieve the embedded font for the purposes of viewing this WordprocessingML document only, using the algorithm described in §17.8.1. |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |
| subsetted (Embedded Font Is Subsetted) | Specifies that the embedded font targeted by the id attribute has been subsetted. |

#### embedRegular (Regular Font Style Embedding)

This element specifies information about the embedded font storage for the regular form of a font when it is embedded. This form is used when neither bold nor italics is applied to a text run.

|  |  |
| --- | --- |
| Attributes | Description |
| fontKey (Embedded Font Obfuscation Key) | Specifies the key which was used to obfuscate this embedded font. This key can be used to retrieve the embedded font for the purposes of viewing this WordprocessingML document only, using the algorithm described in §17.8.1. |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |
| subsetted (Embedded Font Is Subsetted) | Specifies that the embedded font targeted by the id attribute has been subsetted. |

#### embedSystemFonts (Embed Common System Fonts)

This element specifies that applications shall embed common system fonts when they are in use and font embedding is enabled for this document using the embedTrueTypeFonts element (§17.8.3.8). *Common system fonts* refer to a set of fonts which are typically always present on a machine and are not defined by ECMA-376.

#### embedTrueTypeFonts (Embed TrueType Fonts)

This element specifies that applications shall embed the fonts in use in this document when it is saved. These fonts shall be embedded subject to the algorithm specified in §17.8.1.

#### family (Font Family)

This element specifies the font family of the current font. This information can be used as defined in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Font Family Value) | Specifies the font family for the parent font. |

#### font (Properties for a Single Font)

This element specifies the properties for one of the fonts used in this document. A font element shall be written out for each font face used in the document, and includes:

|  |  |
| --- | --- |
| Attributes | Description |
| name (Primary Font Name) | Specifies the primary name of the current font. This name shall be used to link the information stored in this element with uses of this value in the rFonts element (§17.3.2.26) in document content. |

#### fonts (Font Table Root Element)

This element specifies the root element for a font table part within a WordprocessingML document and specifies information about the fonts used in this document, each contained within a child font element.

#### notTrueType (Not a TrueType outline Font)

This element specifies that this font is not a font including TrueType outline in a format conforming to ISO/IEC 14496-22:2007. This information can be used in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available.

#### panose1 (Panose-1 Typeface Classification Number)

This element specifies the Panose-1 classification number shown in §5.2.7.17 of ISO/IEC 14496-22. This information can be used as defined in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the Panose-1 classification number for the font, stored as a series of two digit hexadecimal encodings of each digits of the Panose number. |

#### pitch (Font Pitch)

This element specifies the font pitch of the current font. This information can be used as defined in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the font pitch for the font. |

#### saveSubsetFonts (Subset Fonts When Embedding)

This element specifies that applications shall subset fonts when font embedding is enabled for this document using the embedTrueTypeFonts element (§17.8.3.8). *Subsetting* is a mechanism by which only the glyphs used in the contents of this WordprocessingML document are stored in an embedded font, in order to prevent the file from becoming unnecessarily large from the use of a small number of glyphs from a large, embedded font.

#### sig (Supported Unicode Subranges and Code Pages)

This element specifies information identifying the code pages and Unicode subranges for which the parent font provides glyphs using the mechanism defined in §5.2.7.18 and §5.2.7.28 of ISO/IEC 14496-22. This information can be used as defined in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| csb0 (Lower 32 Bits of Code Page Bit Field) | Specifies a four digit hexadecimal encoding of the first 32 bits of the 64-bit code-page bit field that identifies which specific character sets or code pages are supported by the parent font using the format defined by ulCodePageRange1 in §5.2.7.28 of ISO/IEC 14496-22. |
| csb1 (Upper 32 Bits of Code Page Bit Field) | Specifies a four digit hexadecimal encoding of the upper 32 bits of the 64-bit code-page |
| usb0 (First 32 Bits of Unicode Subset Bitfield) | Specifies the first 32 bits of the 128-bit Unicode subset bit field (USB) as defined by ulUnicodeRange1 of §5.2.7.18 of ISO/IEC 14496-22. |
| usb1 (Second 32 Bits of Unicode Subset Bitfield) | Specifies the second 32 bits of the 128-bit Unicode subset bit field (USB) as defined by ulUnicodeRange2 of §5.2.7.18 of ISO/IEC 14496-22. |
| usb2 (Third 32 Bits of Unicode Subset Bitfield) | Specifies the third 32 bits of the 128-bit Unicode subset bit field (USB) as defined by ulUnicodeRange3 of §5.2.7.18 of ISO/IEC 14496-22. |
| usb3 (Fourth 32 Bits of Unicode Subset Bitfield) | Specifies the fourth 32 bits of the 128-bit Unicode subset bit field (USB) as defined by ulUnicodeRange4 of §5.2.7.18 of ISO/IEC 14496-22. |

## Numbering

*Numbering* refers to symbols - Arabic numerals, Roman numerals, symbol characters ("bullets"), text strings, etc. - in WordprocessingML that are used to label individual paragraphs of text.

### abstractNum (Abstract Numbering Definition)

This element specifies a set of properties which shall dictate the appearance and behavior of a set of numbered paragraphs in a WordprocessingML document. These properties are collectively called an *abstract numbering definition* and are the basis for all numbering information in a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| abstractNumId (Abstract Numbering Definition ID) | Specifies a unique number which shall be used as the identifier for this abstract numbering definition. This unique number shall be referenced by any numbering definition instance in order to inherit the properties specified by this abstract numbering definition. |

### abstractNumId (Abstract Numbering Definition Reference)

This element specifies the abstract numbering definition information whose properties shall be inherited by the parent numbering definition instance.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### ilvl (Numbering Level Reference)

This element specifies the numbering level of the numbering definition instance which shall be applied to the parent paragraph.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### isLgl (Display All Levels Using Arabic Numerals)

This element specifies whether or not all levels displayed for a given numbering level's text shall be displayed using the decimal number format, regardless of the actual number format of that level in the list. [*Note*: This numbering style is often referred to as the legal numbering style. *end note*]

### lvl (Numbering Level Override Definition)

This element specifies the appearance and behavior of a specific numbering level within a given numbering level definition override defined using the lvlOverride element (§17.9.8).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| ilvl (Numbering Level) | Specifies the numbering level definition that is to be defined by this set of numbering properties. |
| tentative (Tentative Numbering) | Specifies that a given numbering level has been saved by a producer but was not used in the parent document. This means that this numbering level can be redefined by a future consumer without changing the actual content of the document. |
| tplc (Template Code) | Specifies a unique hexadecimal value which can be used to specify a location within an application's user interface in which this numbering level shall be displayed. The method by which this value is interpreted shall be application-defined. |

### lvl (Numbering Level Definition)

This element specifies the appearance and behavior of a numbering level within a given abstract numbering definition. A numbering level contains a set of properties for the display of the numbering for a given numbering level within an abstract numbering definition.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| ilvl (Numbering Level) | Specifies the numbering level definition that is to be defined by this set of numbering properties. |
| tentative (Tentative Numbering) | Specifies that a given numbering level has been saved by a producer but was not used in the parent document. This means that this numbering level can be redefined by a future |
| tplc (Template Code) | Specifies a unique hexadecimal value which can be used to specify a location within an application's user interface in which this numbering level shall be displayed. The method by which this value is interpreted shall be application-defined. |

### lvlJc (Justification)

This element specifies the type of justification used on a numbering level's text within a given numbering level. This justification is applied relative to the text margin of the parent numbered paragraph in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Alignment Type) | Specifies the justification which should be applied to the parent object within a document. |

### lvlOverride (Numbering Level Definition Override)

This element specifies an optional override which shall be applied in place of zero or more levels from the abstract numbering definition for a given numbering definition instance. Each instance of this element is used to override the appearance and behavior of a given numbering level definition within the given abstract numbering definition.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| ilvl (Numbering Level ID) | Specifies the numbering level of a given abstract numbering definition to be overridden. |

### lvlPicBulletId (Picture Numbering Symbol Definition Reference)

This element specifies a picture which shall be used as a numbering symbol for a given numbering level by referring to a picture numbering symbol definition's numPictBullet element (§17.9.20). This reference is made through this element's val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contains a decimal number. |

### lvlRestart (Restart Numbering Level Symbol)

This element specifies a one-based index which determines when a numbering level should restart to its start value (§17.9.25). A numbering level restarts when an instance of the specified numbering level, which shall be higher (earlier than this level) or any earlier level is used in the given document's contents. [*Example:* If this value is 2, then both level two and level one reset this value. *end example*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### lvlText (Numbering Level Text)

This element specifies the textual content which shall be displayed when displaying a paragraph with the given numbering level.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| null (Level Text Is Null Character) | Specifies that a null character shall be used as the numbering symbol for a given numbering level. |
| val (Level Text) | Specifies the actual text to be used for the numbering level when it is referenced in the document's content. |

### multiLevelType (Abstract Numbering Definition Type)

This element specifies the type of numbering defined by a given abstract numbering type. This information shall only be used by a consumer to determine user interface behaviors for this numbering definition and shall not be used to limit the behavior of the list (i.e. a list with multiple levels marked as singleLevel shall not be prevented from using levels 2 through 9).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Abstract Numbering Definition Type) | Specifies the specific type of numbering enabled by a given abstract numbering definition. |

### name (Abstract Numbering Definition Name)

This element specifies the name of a given abstract numbering definition. This name can be surfaced in order to provide a user friendly alias for a given numbering definition but shall not influence the behavior of the list - two identical definitions with different name elements shall behave identically.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### nsid (Abstract Numbering Definition Identifier)

This element associates a unique hexadecimal ID to the parent abstract numbering definition. This number shall be identical for two abstract numbering definitions that are based from the same initial numbering definition - if a document is repurposed and the underlying numbering definition is changed, it shall maintain its original nsid.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Long Hexadecimal Number Value) | Specifies a number value specified as a four digit hexadecimal number), whose contents of this decimal number are interpreted based on the context of the parent XML element. |

### num (Numbering Definition Instance)

This element specifies a unique instance of numbering information that can be referenced by zero or more paragraphs within the parent WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| numId (Numbering Definition Instance ID) | Specifies a unique ID which any numbered paragraph which wishes to inherit these numbering properties shall reference using the numPr element (§17.3.1.19). |

### numbering (Numbering Definitions)

This element specifies the formatting, display, and functionality of numbering - Arabic numerals, Roman numerals, symbol characters ("bullets"), text strings, etc. - in WordprocessingML documents, which are used to label individual paragraphs of text.

### numFmt (Numbering Format)

This element specifies the number format that shall be used to display all numbering at this level in the numbering definition. This information is used to replace the level text string %x, where x is a particular onebased level index, with the appropriate value unless the numFmt value is bullet, in which case the literal text of the level text string is used. This value shall be calculated by counting the number of paragraphs at this level since the last restart using the numbering system defined in the val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| format (Custom Defined Number Format) | Specifies a custom number format using the syntax defined by the XSLT format attribute. This format shall be used for all numbering in the parent object. |
| val (Numbering Format Type) | Specifies the number format that shall be used for all numbering in the parent object. |

### numId (Numbering Definition Instance Reference)

This element specifies the numbering definition instance which shall be used for the given parent numbered paragraph in the WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### numIdMacAtCleanup (Last Reviewed Abstract Numbering Definition)

This element specifies to a consumer the progress in the last attempt made by the application to remove unused abstract numbering definitions from a given document. If a legacy document is opened by a consumer, it can choose to remove abstract numbering definition which are 'orphaned' (have no associated numbering definition instances). This element is used by those consumers to indicate their progress (if not complete) in reviewing existing abstract numbering definitions. [*Note*: Removing unused abstract numbering definition from a document reduces the file size but is not required. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contains a decimal number. |

### numPicBullet (Picture Numbering Symbol Definition)

This element specifies the appearance and behavior of a specific picture to be used as the numbering symbol within a numbering level definition in a document and is the basis for all picture numbering symbol information in a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| numPicBulletId (Picture Numbering Symbol ID) | Specifies a unique ID for this picture bullet definition which shall be used to reference this picture bullet from a numbering level definition. |

### numStyleLink (Numbering Style Reference)

This element specifies an abstract numbering that does not contain the actual numbering properties for its numbering type, but rather serves as a reference to a numbering style stored in the document, which shall be applied when this abstract numbering definition is referenced, and itself points at the actual underlying abstract numbering definition to be used.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### pPr (Numbering Level Associated Paragraph Properties)

This element specifies the paragraph properties which shall be applied as part of a given numbering level within the parent numbering definition. These paragraph properties are applied to any numbered paragraph that references the given numbering definition and numbering level.

### pStyle (Paragraph Style's Associated Numbering Level)

This element specifies the name of a paragraph style which shall automatically this numbering level when applied to the contents of the document. When a paragraph style is defined to include a numbering definition, any numbering level defined by the numPr element (§17.3.1.19) shall be ignored, and instead this element shall specify the numbering level associated with that paragraph style.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### rPr (Numbering Symbol Run Properties)

This element specifies the run properties which shall be applied to the numbering level's text specified in the lvlText element (§17.9.11) when it is applied to paragraphs in this document.

### start (Starting Value)

This element specifies the starting value for the numbering used by the parent numbering level within a given numbering level definition. This value is used when this level initially starts in a document, as well as whenever it is restarted via the properties set in the lvlRestart element (§17.9.10).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contains a decimal number. |

### startOverride (Numbering Level Starting Value Override)

This element specifies the number that the specified level override shall begin with. This value is used to reset the numbering in a given level.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### styleLink (Numbering Style Definition)

This element specifies that the parent abstract numbering definition is the base numbering definition for the specified numbering style referenced in its val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its content contains a string. |

### suff (Content Between Numbering Symbol and Paragraph Text)

This element specifies the content which shall be added between a given numbering level's text and the text of every numbered paragraph which references that numbering level.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Character Type Between Numbering and Text) | Specifies the character which shall follow the list number. |

### tmpl (Numbering Template Code)

This element specifies a unique hexadecimal code which can be used to determine a location within application user interface in which this abstract numbering definition shall be displayed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Long Hexadecimal Number Value) | Specifies a number value specified as a four digit hexadecimal number), whose contents of this decimal number are interpreted based on the context of the parent XML element. |

## Headers and Footers

Headers and footers refer to text, graphics, or data (such as page number, date, document title, and so on) that can appear at the top or bottom of each page in a WordprocessingML document.

### evenAndOddHeaders (Different Even/Odd Page Headers and Footers)

This element specifies whether sections in this document shall have different headers and footers for even and odd pages (an odd page header/footer and an even page header/footer).

### footerReference (Footer Reference)

This element specifies a single footer which shall be associated with the current section in the document. This footer shall be referenced via the id attribute, which specifies an explicit relationship to the appropriate Footer part in the WordprocessingML package.

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |
| type (Header or Footer Type) | Specifies the type of header or footer specified by the target relationship ID. This header/footer type determines the page(s) on which the current header or footer shall be displayed. |

### ftr (Footer)

This element specifies the content for a single footer for use within one or more sections of a WordprocessingML document.

### hdr (Header)

This element specifies the content for a single header for use within one or more sections of a WordprocessingML document.

### headerReference (Header Reference)

This element specifies a single header which shall be associated with the current section in the document. This header shall be referenced via the id attribute, which specifies an explicit relationship to the appropriate Header part in the WordprocessingML package.

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |
| type (Header or Footer Type) | Specifies the type of header or footer specified by the target relationship ID. This header/footer type determines the page(s) on which the current header or footer shall be displayed. |

### titlePg (Different First Page Headers and Footers)

This element specifies whether the parent section in this document shall have a different header and footer for its first page.

## Footnotes and Endnotes

*Footnotes* and *endnotes* are separate text stories used in documents and books to show the source of borrowed material or to enter explanatory or supplementary information which does not interrupt the normal reading flow of the document.

### continuationSeparator (Continuation Separator Mark)

This element specifies the presence of a continuation separator mark within the current run. A continuation separator mark is a horizontal line which spans the width of the main story's text extents.

### endnote (Endnote Content)

This element specifies the content of a single endnote within a WordprocessingML document. Each endnote shall be represented by a single endnote element, which can contain any *block-level content*.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Footnote/Endnote ID) | Specifies a unique ID which shall be used to match the contents of a footnote or endnote to the associated footnote/endnote reference mark in the document using the footnoteRef or endnoteRef element, as appropriate. |
| type (Footnote/Endnote Type) | Specifies the type of footnote or endnote contained within the current footnote or endnote content definition. |

### endnote (Special Endnote List)

This element specifies the ID for all endnotes which are located in the current document that are not of style normal. Each other type of endnote shall be referenced in this list, or it shall not be loaded. If an endnote is not listed beneath this element, and it is required by the document content, then the document shall be considered non-conformant.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Footnote/Endnote ID) | Specifies a unique ID that shall be used to match the contents of a footnote or endnote to the associated footnote/endnote reference mark in the document using the footnoteReference or endnoteReference element, as appropriate. |

### endnotePr (Document-Wide Endnote Properties)

This element specifies the endnote properties for the current document. Each of these properties are stored as a child element within the endnotePr element.

### endnotePr (Section-Wide Endnote Properties)

This element specifies the endnote properties for the current section. Each of these properties are an override of the document-wide endnote properties (§17.11.4) and are stored as a child element within the endnotePr element.

### endnoteRef (Endnote Reference Mark)

This element specifies the presence of an endnote reference mark. An *endnote reference mark* is a run of automatically numbered text which follows the numbering format set forth via the numFmt element (§17.11.17).

### endnoteReference (Endnote Reference)

This element specifies the presence of an endnote reference. An *endnote reference* is a run of automatically numbered text which references a particular endnote within the parent document and inherits the endnote reference mark's numbering.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| customMarkFollows (Suppress Footnote/Endnote Reference Mark) | Specifies that the current footnote or endnote shall not have an associated footnote or endnote reference mark, as appropriate. |
| id (Footnote/Endnote ID Reference) | Specifies the footnote or endnote which is being referenced by the current footnote or endnote reference in the document. |

### endnotes (Document Endnotes)

This element specifies the set of all endnotes in the document, including endnote separators and continuation notices. This element is the root node for the Endnotes part.

### footnote (Special Footnote List)

This element specifies the ID for all footnotes which are located in the current document that are not of style normal. Each other type of footnote shall be referenced in this list, or it shall not be loaded. This means that if a special footnote is not listed beneath this element, and it is required by the document content, then the document shall be considered non-conformant.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Footnote/Endnote ID) | Specifies a unique ID which shall be used to match the contents of a footnote or endnote to the associated footnote/endnote reference mark in the document using the footnoteRef or endnoteRef element, as appropriate. |

### footnote (Footnote Content)

This element specifies the content of a single footnote within a WordprocessingML document. Each footnote shall be represented by a single footnote element, which can contain any *block-level content*.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Footnote/Endnote ID) | Specifies a unique ID that shall be used to match the contents of a footnote or endnote to the associated footnote/endnote reference mark in the document using the footnoteReference or endnoteReference element, as appropriate. |
| type (Footnote/Endnote Type) | Specifies the type of footnote or endnote contained within the current footnote or endnote content definition. |

### footnotePr (Section-Wide Footnote Properties)

This element specifies the footnote properties for the current section. Each of these properties are an override of the document-wide footnote properties (§17.11.12) and are stored as a child element within the footnotePr element.

### footnotePr (Document-Wide Footnote Properties)

This element specifies the footnote properties for this document. Each property is stored as a unique element within the footnotePr element.

### footnoteRef (Footnote Reference Mark)

This element specifies the presence of a footnote reference mark. A *footnote reference mark* is a run of automatically numbered text which follows the numbering format set forth via the footnote numFmt element (§17.11.18).

### footnoteReference (Footnote Reference)

This element specifies the presence of a footnote reference. A *footnote reference* is a run of automatically numbered text which references a particular footnote within the parent document and inherits the footnote reference mark's numbering.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| customMarkFollows (Suppress Footnote/Endnote Reference Mark) | Specifies that the current footnote or endnote shall not have an associated footnote or endnote reference mark, as appropriate. |
| id (Footnote/Endnote ID Reference) | Specifies the footnote or endnote which is being referenced by the current footnote or endnote reference in the document. |

### footnotes (Document Footnotes)

This element specifies the set of all footnotes in the document, including footnote separators and continuation notices. This element is the root node for the Footnotes part.

### noEndnote (Suppress Endnotes In Document)

This element specifies that all endnotes in this document shall not be displayed or printed. If this element is placed on any section break other than the first section break in the document, it shall be ignored.

### numFmt (Endnote Numbering Format)

This element specifies the numbering format that shall be used to determine the endnote reference mark value for all automatically numbered endnote reference marks (those without the suppressRef attribute set).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| format (Custom Defined Number Format) | Specifies a custom number format using the syntax defined by the XSLT format attribute. This format shall be used for all numbering in the parent object. |
| val (Numbering Format Type) | Specifies the number format that shall be used for all numbering in the parent object. |

### numFmt (Footnote Numbering Format)

This element specifies the numbering format that shall be used to determine the footnote reference mark value for all automatically numbered footnote reference marks (those without the suppressRef attribute set).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| format (Custom Defined Number Format) | Specifies a custom number format using the syntax defined by the XSLT format attribute. This format shall be used for all numbering in the parent object. |
| val (Numbering Format Type) | Specifies the number format that shall be used for all numbering in the parent object. |

### numRestart (Footnote and Endnote Numbering Restart Location)

This element specifies when all automatic numbering for the footnote or endnote reference marks shall be restarted. When restarted, the next automatically numbered footnote or endnote in the document (each footnote/endnote type is handled independently) shall restart to the specified numStart value (§17.11.20).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Automatic Numbering Restart Value) | Specifies when the automatic numbering shall be restarted for the current set of footnotes or endnotes. |

### numStart (Footnote and Endnote Numbering Starting Value)

This element specifies the starting number or character for the first automatically numbered footnotes or endnote in the document, as well as the first automatically numbered footnotes after each restart point specified by the numRestart element (§17.11.19). This value shall be specified in decimal number units, then translated accordingly to the appropriate numbering format.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### pos (Footnote Placement)

This element specifies where footnotes shall be placed on the page when they are referenced by text in the current document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Footnote Position Type) | Specifies the position of footnotes in the document. |

### pos (Endnote Placement)

This element specifies where endnotes shall be placed on the page when they are referenced by text in the current document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Endnote Position Type) | Specifies the position of endnotes on the parent section or the document. |

### separator (Footnote/Endnote Separator Mark)

This element specifies the presence of a separator mark within the current run. A *separator mark* is a horizontal line which spans part of the width text extents.

## Glossary Document

Within a WordprocessingML file, the *glossary document* is a supplemental storage location for additional document content which shall travel with the document, but which shall not be displayed for printed as part of the main document until it is explicitly added to that document by deliberate action.

### behavior (Entry Insertion Behavior)

This element specifies a single behavior which shall be applied to the contents of the parent glossary document entry (§17.12.5) when it is added to the main document story of a WordprocessingML document. These behaviors shall be used to format the surrounding WordprocessingML around insertion, and do not require the presence of a user interface (i.e. applications without a user interface shall also utilize these settings).

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| val (Insertion Behavior Value) | Specifies the insertion behavior which shall be associated with the current glossary document entry. |

### behaviors (Entry Insertion Behaviors)

This element specifies the set of behaviors which shall be applied to the contents of the parent glossary document entry (§17.12.5) when it is added to the main document story of a WordprocessingML document. Since multiple behaviors can be specified for a single part, the sum total of all behaviors shall be used to insert the parent entry into the contents of the WordprocessingML document.

### category (Entry Categorization)

This element specifies the categorization for the parent glossary document entry. This categorization shall not imply any behaviors around the entry, and is only used to organize the set of glossary document entries within an application or user interface (i.e. to disambiguate between two entries with the same entry name (§17.12.13)).

### description (Description for Entry)

This element specifies a description for the contents of this glossary document entry. This description can contain any string content, and allows the entry to have additional information contained within the definition for this glossary document entry. [*Note*: This description can be surfaced in a user interface, for example. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| val (String Value) | Specifies that its contents contain a string. |

### docPart (Glossary Document Entry)

This element specifies the details for a single glossary document entry contained in the document. This glossary document entry can consist of one or both of the following:

### docPartBody (Contents of Glossary Document Entry)

This element specifies the contents of the parent glossary document entry (§17.12.5). These contents shall consist of one or more block-level elements, analogous to the body element (§17.2.2) of the main document story for the current document.

### docPartPr (Glossary Document Entry Properties)

This element specifies the set of properties which shall be applied to the parent glossary document entry. These properties define its name, categorization, and behaviors.

### docParts (List of Glossary Document Entries)

This element specifies the collection of glossary document entries which are stored in the current Glossary Document part.

### gallery (Gallery Associated With Entry)

This element specifies the predefined gallery into which the current glossary document part shall be classified. This classification, although its enumeration values can be interpreted to imply semantics around the contents of the parent glossary document entry, shall only be used to classify and sort this entry (via an application or a user interface).

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| val (Gallery Value) | Specifies the classification of gallery which shall be associated with the parent glossary document entry. |

### glossaryDocument (Glossary Document Root Element)

This element specifies the root element for a glossary document part within a WordprocessingML document. A glossary document is an supplementary document story in a WordprocessingML that shall be afforded all of the relationships of the Main Document part, such as:

### guid (Entry ID)

This element specifies a unique identifier (specified using a 128-bit GUID stored on the val attribute) that uniquely identifies this document building block.[*Note*: This unique identifier can be used by an application to uniquely reference a single document building block regardless of different naming, for example when the same part has different names for localization purposes. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| val (GUID Value) | Specifies a 128-bit globally unique identifier (GUID) value as defined by the simple type referenced below. The contents of this GUID shall be interpreted based on the context of the parent XML element. |

### name (Category Associated With Entry)

This element specifies the category into which the current glossary document part shall be classified. This classification can consist of any string value as determined by its contents, and shall only be used to classify and sort this entry (via an application or a user interface).

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| val (String Value) | Specifies that its contents contain a string. |

### name (Entry Name)

This element specifies a name for the contents of this glossary document entry. This name can contain any string content and allows the entry to have a friendly identifier contained within the definition for this glossary document entry. [*Note*: This name can be surfaced in a user interface, for example. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| decorated (Built-In Entry) val (Name Value) | Specifies that the name for the current entry is a built-in entry which should not be displayed in the user interface. [*Note*: This information can be used by an application as needed, for example, to disambiguate an entry from one with the same name, ensuring that the built-in entry can be uniquely identified by the application. *end note*] |

### style (Associated Paragraph Style Name)

This element specifies the style ID for a paragraph style which shall be associated with the current glossary document entry. This paragraph style associated shall not imply anything about the formatting or content of the glossary document entry, and shall only be used to filter and/or sort this entry (via an application or a user interface). [*Note*: One example of the level of classification offered by this element is to only show it as available when the formatting of the paragraph matches the specified style. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| val (String Value) | Specifies that its contents contain a string. |

### type (Entry Type)

This element specifies an entry type which shall be applied to the properties of the parent glossary document entry (§17.12.5). Each of these entry types can, based on their values, influence the visibility and behavior of the parent glossary document entry as defined by the associated simple type information.

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| val (Type Value) | Specifies the value for the current entry type. |

### types (Entry Types)

This element specifies the set of entry types which shall be applied to the properties of the parent glossary document entry (§17.12.5). Each of these entry types can, based on their values, influence the visibility and behavior of the parent glossary document entry.

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| all (Entry Is Of All Types) | Specifies that the current glossary document is all entry types. This attribute shall override any information specified as child elements of this element and shall ensure that the current entry is associated with all available entry types. |

## Annotations

Within a WordprocessingML document, *annotations* refer to various types of supplementary markup which can be stored inside or around a region of text within the document's contents. [*Example*: The types of supplementary information stored within a document can include comments, revisions, spelling and/or grammatical errors, bookmark information and optional editing permissions. *end example*]

### Inline Annotations

*Inline annotations* describe all annotations which do not require special handling in order to maintain the XML wellformedness requirements of the resulting WordprocessingML output. In these cases, a single XML element shall encapsulate the entire contents of the document content which is being annotated.

### "Cross Structure" Annotations

*"Cross structure" annotations* describe the class of annotations which can span portions of WordprocessingML markup [*Example*: Cross structure annotations can span parts of multiple paragraphs, one half of a custom XML markup element's contents, etc. *end example*]. In these cases, the annotation's region is delimited by two elements: a start element and an end element. These two elements mark the start and end points of the annotated content, but do not contain it. The pairing of the start and end marker are linked via a common value for their id attributes.

### Property Annotations

*Property annotations* describe the class of annotations which are stored as a property on an object [*Example*: Property annotations can appear on paragraph properties, run properties, table rows, etc. *end example*] In these cases, the annotation's semantics are defined by the property, as they can affect content and/or formatting.

### Comments

*Comments* describe annotations which are anchored to a region of document content, but which contain an arbitrary amount of block-level content stored in their own separate document stories. Within a WordprocessingML document, comments are stored in a separate Comments part within the document package.

#### annotationRef (Comment Information Block)

This element specifies the presence of an annotation reference mark at the current location in the comment. An *annotation reference mark* is an information block that represents the metadata about the current comment within the document. This annotation reference mark should typically consist of the initials and a unique integer associated with its position in the document but can be displayed in any desired format.

#### comment (Comment Content)

This element specifies the content of a single comment stored in the Comments part of a WordprocessingML document.

|  |  |
| --- | --- |
| Attributes | Description |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376 |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |
| initials (Initials of Comment Author) | Specifies the initials of the author of the current comment. [*Note*: This information can be used to format and present the associated comment information block (§17.13.4.1), or in any user interface supported by an application. If there is more than one author with the same initials, it might be more useful to display the author name. *end note*] |

#### commentRangeEnd (Comment Anchor Range End)

This element specifies the end of the range around which a comment is anchored in the content of the WordprocessingML document. The id attribute on this element shall be used to link the corresponding comment anchor range start element and comment reference.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| displacedByCustomXml (Annotation Marker Relocated For Custom XML Markup) | Specifies that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document. This element only has an effect when the custom XML element is block-level (i.e. surrounds an entire paragraph), as in this scenario the logical and physical placement of the annotation and custom XML element can differ. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### commentRangeStart (Comment Anchor Range Start)

This element specifies the start of the range around which a comment is anchored in the content of the

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| displacedByCustomXml (Annotation Marker Relocated For Custom XML Markup) | Specifies that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document. This element only has an effect when the custom XML element is block-level (i.e. surrounds an entire paragraph), as in this scenario the logical and physical placement of the annotation and custom XML element can differ. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### commentReference (Comment Content Reference Mark)

This element specifies the presence of a comment content reference mark, which links the comment content (§17.13.4.2) with the contents of a document story. This link is established by matching the comment whose id attribute matches the id attribute on this element. The resulting comment is anchored to the range with comment range elements with the same id attribute values (if present) as follows:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### comments (Comments Collection)

This element specifies all of the comments defined in the current document. It is the root element of the Comments part of a WordprocessingML document.

### Revisions

*Revisions* in WordprocessingML provide a mechanism for storing information about the evolution of the document (i.e. the set of modifications made to a document by one of more authors). When an application adds revisions to the content of a WordprocessingML document, they are specifying this by storing either (depending on the revision type):

#### cellDel (Table Cell Deletion)

This element specifies that the parent table cell shall be treated as though it was deleted from the document while revisions were being recorded. This means that although the table cell element exists in the structure of the table, the table cell technically no longer exists in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### cellIns (Table Cell Insertion)

This element specifies that the parent table cell shall be treated as though it was inserted into the document while revisions were being recorded.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### cellMerge (Vertically Merged/Split Table Cells)

This element specifies that the vertical merge state of the parent table cell has been modified while revisions were being tracked for the document. The vmerge and vmergeOrig attributes on this element specify the original and revised vertical merge states of the table cell.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |
| vMerge (Revised Vertical Merge Setting) | Specifies the vertical merge setting which was applied to the parent table cell by this revision. |
| vMergeOrig | Specifies the vertical merge setting which was removed from the parent table cell by this revision. |

#### customXmlDelRangeEnd (Custom XML Markup Deletion End)

This element specifies the end of a region in which custom XML markup has been deleted and tracked as a revision. The id attribute on this element shall be used to link this element with the corresponding custom XML markup deletion start marker in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### customXmlDelRangeStart (Custom XML Markup Deletion Start)

This element specifies the beginning of a region in which all custom XML markup has been deleted and tracked as a revision. The id attribute on this element shall be used to link this element with the corresponding custom XML markup deletion end marker in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### customXmlInsRangeEnd (Custom XML Markup Insertion End)

This element specifies the end of a region within which all custom XML markup has been inserted and tracked as a revision. The id attribute on this element shall be used to link this element with the corresponding custom XML markup insertion start marker in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### customXmlInsRangeStart (Custom XML Markup Insertion Start)

This element specifies the beginning of a region in which all custom XML markup has been inserted and tracked as a revision. The id attribute on this element shall be used to link this element with the corresponding custom XML markup insertion end marker in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### customXmlMoveFromRangeEnd (Custom XML Markup Source of the move End)

This element specifies the end of a region within which all custom XML markup was moved to another location in the document and this move was tracked as a revision. The id attribute on this element shall be used to link this element with the corresponding custom XML source of the move start marker in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### customXmlMoveFromRangeStart (Custom XML Markup Source of the move Start)

This element specifies the start of a region within which all custom XML markup was moved to another location in the document and this move was tracked as a revision. The id attribute on this element shall be used to link this element with the corresponding custom XML source of the move end marker in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### customXmlMoveToRangeEnd (Custom XML Markup Destination of the move Location End)

This element specifies the end of a region within which all custom XML markup was moved to this location in the document and this move was tracked as a revision. The id attribute on this element shall be used to link this element with the corresponding custom XML destination of the move start marker in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### customXmlMoveToRangeStart (Custom XML Markup Destination of the move Location Start)

This element specifies the start of a region within which all custom XML markup was moved to this location in the document and this move was tracked as a revision. The id attribute on this element shall be used to link this element with the corresponding custom XML destination of the move end marker in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### del (Deleted Table Row)

This element specifies that the parent table row shall be treated as a deleted row whose deletion has been tracked as a revision. This setting shall not imply any revision state about the table cells in this row or their contents (which shall be revision marked independently), and shall only affect the table row itself.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### del (Deleted Math Control Character)

This element specifies that the Office Open XML Math control character which contains this element was deleted and tracked as a revision. [*Example*: The deletion of a fraction bar. *end example*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### del (Deleted Run Content)

This element specifies that the inline-level content contained within it shall be treated as deleted content which has been tracked as a revision.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### del (Deleted Paragraph)

This element specifies that the paragraph mark delimiting the end of a paragraph within a WordprocessingML document shall be treated as deleted (i.e. the contents of this paragraph are no longer delimited by this paragraph mark, and are combined with the following paragraph - but those contents shall not automatically be marked as deleted) as part of a tracked revision.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### ins (Inserted Math Control Character)

This element specifies that the Office Open XML Math control character which contains this element was inserted and tracked as a revision. [*Example*: The insertion of a fraction bar. *end example*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### ins (Inserted Table Row)

This element specifies that the parent table row shall be treated as an inserted row whose insertion has been tracked as a revision. This setting shall not imply any revision state about the table cells in this row or their contents (which shall be revision marked independently), and shall only affect the table row itself.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### ins (Inserted Run Content)

This element specifies that the inline-level content contained within it shall be treated as inserted content which has been tracked as a revision.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### ins (Inserted Numbering Properties)

This element specifies that the numbering information defined by the parent element shall be treated as numbering information which was recorded as an insertion using revisions.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### ins (Inserted Paragraph)

This element specifies that the paragraph mark delimiting the end of a paragraph within a WordprocessingML document shall be treated as deleted (i.e. the contents of this paragraph are no longer delimited by this paragraph mark and are combined with the following paragraph) as part of a tracked revision.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### moveFrom (Source of the move Paragraph)

This element specifies that the parent paragraph has been moved away from this location and tracked as a revision. This does not imply anything about the revision state of the contents of the paragraph and applies only to the existence of the paragraph as its own unique paragraph.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### moveFrom (Source of the move Run Content)

This element specifies that the inline-level content contained within it shall be treated as content which has been moved away from this location and tracked as a revision.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### moveFromRangeEnd (Source of the move Location Container - End)

This element specifies the end of a region whose source of the move contents are part of a single named move. When a source of the move is stored as a revision in a WordprocessingML document, two pieces of information shall be stored about that source of the move:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| displacedByCustomXml (Annotation Marker Relocated For Custom XML Markup) | Specifies that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document. This element only has an effect when the custom XML element is block-level (i.e. surrounds an entire paragraph), as in this scenario the logical and physical placement of the annotation and custom XML element can differ. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### moveFromRangeStart (Source of the move Location Container - Start)

This element specifies the start of a region whose source of the move contents are part of a single named move. When a source of the move is stored as a revision in a WordprocessingML document, two pieces of information shall be stored about that source of the move:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| colFirst (First Table Column Covered By Bookmark) | Specifies the zero-based index of the first column in this row which shall be part of this bookmark. |
| colLast (Last Table Column Covered By Bookmark) | Specifies the zero-based index of the last column in this row which shall be part of this bookmark. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| displacedByCusto mXml (Annotation Marker Relocated For Custom XML Markup) | Specifies that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document. This element only has an effect when the custom XML element is block-level (i.e. surrounds an entire paragraph), as in this scenario the logical and physical placement of the annotation and custom XML element can differ. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |
| name (Bookmark Name) | Specifies the bookmark name. |

#### moveTo (Destination of the move Run Content)

This element specifies that the inline-level content contained within it shall be treated as content which has been moved to this location and tracked as a revision.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### moveTo (Destination of the move Paragraph)

This element specifies that the parent paragraph has been moved to this location and tracked as a revision. This does not imply anything about the revision state of the contents of the paragraph and applies only to the existence of the paragraph as its own unique paragraph.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### moveToRangeEnd (Destination of the move Location Container - End)

This element specifies the end of a region whose destination of the move contents are part of a single named move. When a source of the move is stored as a revision in a WordprocessingML document, two pieces of information shall be stored about that destination of the move:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| displacedByCustomXml (Annotation Marker Relocated For Custom XML Markup) | Specifies that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document. This element only has an effect when the custom XML element is block-level (i.e. surrounds an entire paragraph), as in this scenario the logical and physical placement of the annotation and custom XML element can differ. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### moveToRangeStart (Destination of the move Location Container - Start)

This element specifies the start of the region whose destination of the move contents are part of a single named move. When a destination of the move is stored as a revision in a WordprocessingML document, two pieces of information shall be stored about that destination of the move:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| colFirst (First Table Column Covered By Bookmark) | Specifies the zero-based index of the first column in this row which shall be part of this bookmark. |
| colLast (Last Table Column Covered By Bookmark) | Specifies the zero-based index of the last column in this row which shall be part of this bookmark. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| displacedByCustomXml (Annotation Marker Relocated For Custom XML Markup) | Specifies that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document. This element only has an effect when the custom XML element is block-level (i.e. surrounds an entire paragraph), as in this scenario the logical and physical placement of the annotation and custom XML element can differ. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. | |
| name (Bookmark Name) | Specifies the bookmark name. | |

#### pPrChange (Revision Information for Paragraph Properties)

This element specifies the details about a single revision to a set of paragraph properties in a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### rPrChange (Revision Information for Run Properties on the Paragraph Mark)

This element specifies the details about a single revision to a set of run properties applied to a paragraph mark within a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### rPrChange (Revision Information for Run Properties)

This element specifies the details about a single revision to a set of run properties in a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### sectPrChange (Revision Information for Section Properties)

This element specifies the details about a single revision to a set of section properties in a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### tblGridChange (Revision Information for Table Grid Column Definitions)

This element specifies the details about a single revision to a table's grid column definitions within a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### tblPrChange (Revision Information for Table Properties)

This element specifies the details about a single revision to a set of table properties in a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### tblPrExChange (Revision Information for Table-Level Property Exceptions)

This element specifies the details about a single revision to a set of table-level property exceptions in a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### tcPrChange (Revision Information for Table Cell Properties)

This element specifies the details about a single revision to a set of table cell properties in a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### trPrChange (Revision Information for Table Row Properties)

This element specifies the details about a single revision to a set of table row properties in a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| author (Annotation Author) | Specifies the author for an annotation within a WordprocessingML document. |
| date (Annotation Date) | Specifies the date information for an annotation within a WordprocessingML document. The use of this information is outside of the scope of ECMA-376. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

### Bookmarks

Within a WordprocessingML document, *bookmarks* refer to arbitrary regions of content which are bounded and have a unique name associated with them.

#### bookmarkEnd (Bookmark End)

This element specifies the end of a bookmark within a WordprocessingML document. This end marker is matched with the appropriately paired start marker by matching the value of the id attribute from the associated bookmarkStart element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| displacedByCustomXml (Annotation Marker Relocated For Custom XML Markup) | Specifies that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document. This element only has an effect when the custom XML element is block-level (i.e. surrounds an entire paragraph), as in this scenario the logical and physical placement of the annotation and custom XML element can differ. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### bookmarkStart (Bookmark Start)

This element specifies the start of a bookmark within a WordprocessingML document. This start marker is matched with the appropriately paired end marker by matching the value of the id attribute from the associated bookmarkEnd element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| colFirst (First Table Column Covered By Bookmark) | Specifies the zero-based index of the first column in this row which shall be part of this bookmark. |
| colLast (Last Table | Specifies the zero-based index of the last column in this row which shall be part of this bookmark. |
| displacedByCustomXml (Annotation Marker Relocated For Custom XML Markup) | Specifies that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document. This element only has an effect when the custom XML element is block-level (i.e. surrounds an entire paragraph), as in this scenario the logical and physical placement of the annotation and custom XML element can differ. |
| id (Annotation Identifier) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |
| name (Bookmark Name) | Specifies the bookmark name. |

### Range Permissions

*Range permissions* in a WordprocessingML document refer to a special kind of bookmark used to control which subset(s) of users can edit a particular region of a document. Range permissions specify the user or set of users which are allowed to edit all content between them whenever the document protection specified by the documentProtection element (§17.15.1.29) is enabled and set to readOnly or comments.

#### permEnd (Range Permission End)

This element specifies the end of a single range permission within a WordprocessingML document. This end marker is matched with the appropriately paired start marker by matching the value of the id attribute from the associated permStart element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| displacedByCustomXml (Annotation Displaced By Custom XML Markup) | Specifies that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document. This element only has an effect when the custom XML element is block-level (i.e. surrounds an entire paragraph), as in this scenario the logical and physical placement of the annotation and custom XML element can differ. |
| id (Annotation ID) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

#### permStart (Range Permission Start)

This element specifies the start of a range permission within a WordprocessingML document. This start marker is matched with the appropriately paired end marker by matching the value of the id attribute from the associated permEnd element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| colFirst (First Table Column Covered By Range Permission) | Specifies the zero-based index of the first column in this row which shall be part of this range permission. |
| colLast (Last Table Column Covered By Range Permission) | Specifies the zero-based index of the last column in this row which shall be part of this range permission. |
| displacedByCustomXml (Annotation Displaced By Custom XML Markup) | Specifies that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document. This element only has an effect when the custom XML element is block-level (i.e. surrounds an entire paragraph), as in this scenario the logical and physical placement of the annotation and custom XML element can differ. |
| ed (Single User For Range Permission) | Specifies a single user for which this range permission shall be enabled (i.e. a user which shall be able to edit this range when document protection is enabled). |
| edGrp (Editor Group For Range Permission) | Specifies an alias (or editing group) which shall be used to determine if the current user shall be allowed to edit this range of the document. This mechanism simply provides a set of predefined editing groups which can be associated with user accounts by applications in any desired manner. |
| id (Annotation ID) | Specifies a unique identifier for an annotation within a WordprocessingML document. The restrictions on the id attribute, if any, are defined by the parent XML element. |

### Spelling and Grammar

The remaining kind of annotation stored in a WordprocessingML document, *spelling and grammar errors* are annotations used to specify the locations of existing spelling and grammatical errors within the contents of a document.

#### proofErr (Proofing Error Anchor)

This element specifies the presence of a start or end anchor for a single proofing error within a WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| type (Proofing Error Anchor Type) | Specifies the type of proofing error anchor at this location in the document. This proofing error type implies the necessary semantics for this element as defined by the parent element. |

## Mail Merge

*Mail merge* refers to an operation by which WordprocessingML documents can work in conjunction with data from an external data source, importing this data into a document according to a set of codes contained in WordprocessingML known as fields.

### active (Record Is Included in Mail Merge)

This element specifies whether a specific record from the specified external data source shall be imported into a merged WordprocessingML document when the mail merge defined for a source document is performed. If this element's val attribute is false, then the record specified by the parent element shall not used to create a merged document.

### activeRecord (Record Currently Displayed In Merged Document)

This element specifies that the hosting application shall display the given record from the specified external data source in place of the MERGEFIELD fields (§17.16.5.35) its data is mapped to via the fieldMapData element (§17.14.15) in a merged document. When this element is present, the val attribute shall specify the one-based index of the record from that data source which shall be used to populate this document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### addressFieldName (Column Containing E-mail Address)

This element specifies the column within a given external data source that contains e-mail addresses. This element is specified independently of the field mappings specified for a given merged document via the fieldMapData element (§17.14.15).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### checkErrors (Mail Merge Error Reporting Setting)

This element specifies the type of error reporting which shall be conducted by an application when performing a mail merge against the specified source data.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### colDelim (Column Delimiter for Data Source)

This element specifies the character which shall be interpreted as the column delimiter used to separate columns within external data sources. The character representing the specific delimiter used for the external data source referenced by a source or merged WordprocessingML document is specified via a decimal number representing the decimal number for the Unicode character representation within this element's val attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### column (Index of Column Being Mapped)

This element specifies the zero-based index of the column within a given external data source which shall be mapped to the local name of a specific MERGEFIELD field (§17.16.5.35) specified by the parent field mapping data. The val attribute specifies this index value, which is used to look up the appropriate column in the data source.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### column (Index of Column Containing Unique Values for Record)

This element specifies the column within the specified external data source that contains unique data for the current record within that data source. This element shall be used in conjunction with the uniqueTag element (§17.14.35) to maintain a relationship between a specific record within an external data source and a given source or merged document. The val attribute on this element shall be interpreted as a zero-based index into the columns specified by the data source, specifying the resulting column as the column in which the uniqueTag element shall be looked up.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### connectString (Data Source Connection String)

This element specifies the connection string used to reconnect to an external data source. The string within this element's val attribute shall contain the connection string that the hosting application shall pass to a external data source access application to enable the WordprocessingML document to be reconnected to the specified external data source.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### dataSource (Data Source File Path)

This element specifies the relationship whose target is the location of the external data source to be connected to a given WordprocessingML document to perform the mail merge (for a source document) or to find the associated field data (for a merged document).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

### dataType (Data Source Type)

This element specifies the type of external data source to be connected to via the Dynamic Data Exchange (DDE) system (such as a spreadsheet or database), or the alternative method of data access if the Dynamic Data Exchange system is not used. This setting is purely a suggestion of the data source access mechanism which shall be used and can be ignored in favor of an alternative mechanism if one is present.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the exact type of external data source to which a given merged WordprocessingML document is to be connected. |

### destination (Merged Document Destination)

This element specifies what the result which shall be generated when a mail merge is carried out on a given WordprocessingML source document. In other words, this element is used to specify what is to be done with the merged documents that result from populating the fields within a given merged WordprocessingML document with data from the specified external data source.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Mail Merge Merged Document Type) | Specifies the type of merged documents which shall be the result of carrying out a mail merge on a given source WordprocessingML document. |

### doNotSuppressBlankLines (Remove Blank Lines from Merged Documents)

This element specifies how an application performing the mail merge shall handle blank lines in the merged documents resulting from the mail merge. Typically, when a mail merge is performed, any blank lines which result from lines whose sole contents are merge fields with no content are removed from the merged document in order to prevent extraneous blank lines from appearing in the merged documents. When this element is present, the merged documents which are generated from the mail merge shall not have any blank lines removed before they are sent to their destination format.

### dynamicAddress (Use Country-Based Address Field Ordering)

This element specifies that the contents of the AddressBlock MERGEFIELD field shall be dynamically ordered based on the country associated with the current record or if the country-invariant version of the address field shall be used in its place. [*Rationale*: When a source document is combined with the contents of a data source in order to produce multiple merged documents, it is often necessary to use an address form specific to the destination country for each particular record in the data source, rather than one static address form for all records. *end rationale*] If this element is set to true, then the mail merge shall use an address form suited to the country associated with the current record in the external data source.

### fHdr (First Row of Data Source Contains Column Names)

This element specifies that a hosting application shall treat the first row of data in the specified external data source as a header row containing the names of each column in the data source, rather than data to populate mapped fields in a merged document. When present, this information shall not change the indices specified in the recipientData elements (§17.14.27) but shall indicate that the first row is not part of the mail merge when it is performed.

### fieldMapData (External Data Source to Merge Field Mapping)

This element specifies how a column specified in the external data source that has been connected to a WordprocessingML document shall be mapped to the pre-defined MERGEFIELD fields (§17.16.5.35) within the given merged document's contents. Each instance of a fieldMapData element contains the information needed to map one column in the external data source to a single type of pre-defined MERGEFIELD field for the purposes of the mail merge in the current document.

### headerSource (Header Definition File Path)

This element specifies the location of a file that contains the column header information which shall be used when connecting to an external data source that does not have column header data specified. Specifically, this element specifies a file that corresponds with the aforementioned external data source. [*Note*: Column headers are needed to enable a hosting application to associate external data source's columns to fields via the fieldMapData element (§17.14.15).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

### lid (Merge Field Name Language ID)

This element specifies the language ID for the language which was used to generate the merge field name which was associated with a given column in the data source, as specified by the fieldMapData element (§17.14.15). This element specifies that when this field mapping is processed by an application, it shall interpret the merge field name as the name for the specified language.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Language Code) | Specifies an identifier for a specific language. |

### linkToQuery (Query Contains Link to External Query File)

This element specifies that the current WordprocessingML document's query string, stored in the query element (§17.14.26) and used to specify the data to be imported from the external data source, actually contains a reference to an external query file which contains the actual query data to be used against the specified external data source for the mail merge. This query shall mimic a SQL query and be of the following form:

### mailAsAttachment (Merged Document To E-Mail Attachment)

This element specifies that, after importing external data into fields to generate a series of destination WordprocessingML documents as e-mails, the resulting documents should be emailed as an attachment rather than the body of the actual e-mail.

### mailMerge (Mail Merge Settings)

This element specifies all of the mail merge information for a document that has been connected to an external data source as part of a mail merge operation.

### mailSubject (Merged E-mail or Fax Subject Line)

This element specifies the text which shall appear in the subject line of the e-mails or faxes that result after the actions of a mail merge have imported external data into fields within a merged WordprocessingML document whose destination, as specified in the destination element (§17.14.21), is email or fax.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### mainDocumentType (Source Document Type)

This element specifies the document type of a given WordprocessingML source document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Mail Merge Source Document Type) | Specifies the type of source document which is specified by the given WordprocessingML document. |

### mappedName (Predefined Merge Field Name)

This element specifies the predefined WordprocessingML MERGEFIELD field name which shall be mapped to the column number specified by the column element (§17.14.6) within this field mapping. [*Guidance*: This element allows the current column from the specified data source to be mapped to a predefined field name, allowing applications to have one standard set of field names to use regardless of the data source column names, for example, to create the address formats to place into an ADDRESSBLOCK field. *end guidance*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### name (Data Source Name for Column)

This element specifies the column name within a given external data source for the column whose index is specified via the column element (§17.14.6). This data source name provides a column name which shall be used to map a specific MERGEFIELD field in the document, as specified by the parent field mapping data. The val attribute specifies the name of this column in the data source when the connection is initially established, which is then used permanently to link columns in the database to MERGEFIELD fields in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### odso (Office Data Source Object Settings)

This element specifies a group of additional settings for the mail merge information which comprise an extension to the standard settings stored with a mail merge which performs two functions:

### query (Query For Data Source Records To Merge)

This element contains the Structured Query Language string (as defined by the normative reference in§3) that shall be run against the specified external data source to return the set of records from the external data which shall be imported into merged WordprocessingML documents when the mail merge operation is performed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### recipientData (Data About Single Data Source Record)

This element specifies information about a single record within an external data source. If a record shall be merged into a merged document, then no information is needed about that record within this part. However, if a given record shall not be merged into a merged document, then the value of the unique key for that record shall be stored within the uniqueTag element as a child of this element (along with the active element) to indicate this exclusion.

### recipientData (Reference to Inclusion/Exclusion Data for Data Source)

This element shall specify a reference to the part which contains data about whether the set of records in the associated data source have been explicitly included or excluded from the specified mail merge. Only those records which must not be used to generate merged WordprocessingML documents shall be stored within the referenced part, as all records shall be merged by default as part of the mail merge operation. [*Guidance*: Applications can choose to store only those records which are excluded for efficiency, or a list of all records in order to determine which set of records were added/removed between mail merge operations. *end guidance*] [*Rationale*: When defining a mail merge, it is possible that a user wishes to connect to a specified data source but specify only a subset of the records returned by the query specified by the query element (§17.14.26) which must be merged as part of the mail merge operation. This element allows applications to utilize a separate part to store this information, either the shared part defined by ECMA-376, or an application-defined part as needed. *end rationale*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

### recipients (Inclusion/Exclusion Data for Data Source)

This element specifies all of the inclusion/exclusion data for the contents of the specified mail merge data source. It is the root element for the Mail Merge Recipient Data part.

### src (ODSO Data Source File Path)

This element specifies the relationship whose target is the location of the external data source to be connected to a given WordprocessingML document to perform the mail merge (for a source document) or to find the associated field data (for a merged document) when the merge type, specified using the dataType element (§17.14.10), is set to native.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

### table (Data Source Table Name)

This element specifies the particular set of data that a source or merged WordprocessingML document shall be connected to within an external data source containing multiple data sets. In other words, when connecting to a WordprocessingML document to an external data source that can have more than one repository of data within it, such as a database with multiple tables or a spreadsheet with multiple worksheets, this element is used to distinguish the specific table or spreadsheet from which data is imported from within the external data source.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### type (ODSO Data Source Type)

This element specifies the type of external data source to be connected to via as part of the ODSO connection information for this mail merge. This setting is purely a suggestion of the data source type, which is being used for this mail merge, and can be ignored in favor of an alternative mechanism if one is present.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Data Source Type Value) | Specifies the type of an external data source used for a mail merge operation. |

### type (Merge Field Mapping)

This element specifies if a given mail merge field has been mapped to a column in the given external data source or not.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Merge Field Mapping Type) | Specifies if the given mail merge field has been mapped to a column in the given external data source (i.e. if the merge field mapping is active or not). |

### udl (UDL Connection String)

This element specifies the Universal Data Link (UDL) connection string used to reconnect to an external data source. The string within this element's val attribute shall contain the connection string that the hosting application shall pass to a external data source access application to enable the WordprocessingML document to be reconnected to the specified external data source.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### uniqueTag (Unique Value for Record)

This element specifies the contents of a given record within the specified external data source, in the column containing unique data for every record within the external data source. given external data source. This element is used in conjunction with the column (§17.14.6) element to maintain a relationship between the records within an external data source and a given merged WordprocessingML document.

### viewMergedData (View Merged Data Within Document)

This element specifies that a specific merged document shall display the data from the specified external data source where merge fields have been inserted. The activeRecord element (§17.14.2) is used to specify which record within the external data source is to have its applicable data displayed where applicable within the WordprocessingML merged document.

## Settings

Within a WordprocessingML document, *settings* specify stored preferences which shall be used when processing the contents of the document. These settings are typically divided into three categories:

### Document Settings

The first group of settings stored in WordprocessingML is document settings. These settings specify all document-level properties which affect the handling of the current document.

#### activeWritingStyle (Grammar Checking Settings)

This element specifies information about the parameters of the grammar checking which was performed on the contents of the current WordprocessingML document. [*Note*: This information can be used as desired by applications; for example, to determine if the current grammar checking state, specified by the proofState element (§17.15.1.65) is sufficient. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| appName (Application Name) | Specifies the name of the application which specified the grammatical settings contained on the attributes for this element. |
| checkStyle (Check Stylistic Rules With Grammar) | Specifies if the grammar content checking performed on this document included stylistic rules for the document content. If specified, applications which support this functionality shall check stylistic rules as well as grammatical ones when checking the grammatical content of this document. |
| dllVersion (Grammatical Check Engine Version) | Specifies the version of the engine that was used to check the grammatical content of the WordprocessingML document. |
| lang (Writing Style Language) | Specifies the language of the engine used to perform the grammatical content checking. |
| nlCheck (Natural Language Grammar Check) | Specifies whether the engine that was used to check the grammatical content of the WordprocessingML document performed natural language-based analysis. |
| vendorID (Grammatical Engine ID) | Specifies a value indicating a unique ID for the writing style engine that was used to check the grammatical content of the WordprocessingML document. |

#### alignBordersAndEdges (Align Paragraph and Table Borders with Page Border)

This element specifies that paragraph borders specified using the pBdr element (§17.3.1.24) and table borders using the tblBorders element (§17.4.39) shall be adjusted to align with extents of the page border defined using the pgBorders element (§17.6.10) if the spacing between these borders is less than or equal to 10.5 points (one character width) or less from the page border. The presence of this setting shall ensure there are no gaps of one character width or less between adjoining page and paragraph/table borders, as borders which are perfectly aligning shall not be displayed in favor of the intervening page border.

#### alwaysMergeEmptyNamespace (Do Not Mark Custom XML Elements With No Namespace As Invalid)

This element specifies whether custom XML markup specified via the customXml element which has no associated namespace shall be treated as an error and moved into a special error namespace (for the purposes of XML schema validation) when the document is opened. If this element is turned on, when an application determines that the current XML markup is in the empty namespace, those elements shall not automatically be moved into an error namespace.

#### alwaysShowPlaceholderText (Use Custom XML Element Names as Default Placeholder Text)

This element specifies that each custom XML element specified using the customXml element within this document shall always show some form of in-document placeholder text presentation when it contains no run content. If the placeholder element (§17.5.2.25) is present in the custom XML element's properties, then this is the placeholder text displayed and this effect has no effect. If the placeholder element is omitted, then the application shall use the name of the element to generate default placeholder text in its place.

#### attachedSchema (Attached Custom XML Schema)

This element specifies that the custom XML schema whose target namespace matches the value specified in the val attribute should be associated with this document when it is loaded, if such a schema is available to the hosting application. Applications can also load and utilize any additional schemas as well as those explicitly mentioned here. [*Note*: These custom XML schemas can then be used to validate the structure of the custom XML markup in the document, etc. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### attachedTemplate (Attached Document Template)

This element specifies the location of a document template which shall be attached to the current WordprocessingML document if it is accessible and of a format supported by an application. Specifically, this element's val attribute shall contain the file path of the associated document template.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

#### autoCaption (Single Automatic Captioning Setting)

This element specifies what type(s) of objects shall automatically labelled with captions (§17.15.1.17), and with which captions the specified objects shall be labelled as defined in the caption element (§17.15.1.16).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| caption (Caption Used for Automatic Captioning) | Specifies the caption defined in using the caption element (§17.15.1.16) which shall be used to automatically label a given type of object inserted in a WordprocessingML document. The caption settings are linked by matching the value of this attribute with the name attribute of the corresponding caption element. |
| name (Identifier of Object to be Automatically Captioned) | Specifies a unique identifier which can be used to associate objects inserted into the document which are to be automatically labeled with a caption when inserted into the WordprocessingML document. |

#### autoCaptions (Automatic Captioning Settings)

This element specifies that one or more types of objects, when inserted into a WordprocessingML document, are automatically be labeled with a specific caption defined using the caption element (§17.15.1.16).

#### autoFormatOverride (Allow Automatic Formatting to Override Formatting Protection Settings)

This element specifies whether formatting automatically applied by an application (i.e. not explicitly applied by a use or an application) shall be allowed to override formatting protection enabled via the formatting attribute on the documentProtection element (§17.15.1.9) when those formatting operations would add formatting which has been explicitly disabled. [*Example*: Automatically adding superscript to the st in the string 1st. *end example*]

#### autoHyphenation (Automatically Hyphenate Document Contents When Displayed)

This element specifies whether the content of a given WordprocessingML document should automatically be hyphenated by the hosting application before it is displayed, if the application supports this functionality.

#### bookFoldPrinting (Book Fold Printing)

This element specifies if the contents of a given WordprocessingML document should be printed as signatures. *Signatures* are printed *sheets*, which depict several pages of a document that are folded and bound with other signatures to form a booklet, a set of which can be bound together to form a book like publication. Specifically, this element specifies that each page in a given WordprocessingML document should be oriented in a landscape fashion, divided in half vertically with two left margins emanating from the bisector of the page, and two right margins instantiated at the left and right side of each page.

#### bookFoldPrintingSheets (Number of Pages Per Booklet)

This element shall be used in conjunction with the bookFoldPrinting (§17.15.1.11) and bookFoldRevPrinting (§17.15.1.13) elements to specify the number of pages to be included in each booklet when printing a series of signatures. Signatures are printed *sheets*, which depict several pages of a document that are to be folded and bound with other signatures to form a booklet. Booklets can be bound together to form a book like publication.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contains a decimal number. |

#### bookFoldRevPrinting (Reverse Book Fold Printing)

This element specifies if pages of a given WordprocessingML document are to be printed as signatures in reverse order. *Signatures* are printed *sheets*, which depict several pages of a document that are folded and bound with other signatures to form a booklet, a set of which can be bound together to form a book like publication. Specifically, this element specifies that each page in a given WordprocessingML document should be oriented in a landscape fashion and divided in half vertically, with two left margins emanating from the bisector of the page, and right margins instantiated at the left and right side of each page.

#### bordersDoNotSurroundFooter (Page Border Excludes Footer)

This element specifies that a given WordprocessingML document’s page border specified using the pgBorders element (§17.6.10) should not surround contents of the footer.

#### bordersDoNotSurroundHeader (Page Border Excludes Header)

This element specifies that a given WordprocessingML document’s page border specified using the pgBorders element (§17.6.10) should not surround contents of the header.

#### caption (Single Caption Type Definition)

This element specifies the contents and positioning for captions which can be used to automatically label objects in a WordprocessingML document. A *caption* is a string that labels an object included in a WordprocessingML document, and typically consists of a string plus a field which numbers this item within a collection of similar objects.

|  |  |
| --- | --- |
| Attributes | Description |
| chapNum (Include Chapter Number in Field for Caption) | Specifies whether or not to display numbering associated with the most recent chapter heading in the WordprocessingML document within the caption field. A *chapter heading* is a paragraph of text within a WordprocessingML document that is formatted with a style that has been specified by the heading attribute to demarcate chapters in documents. |
| heading (Style for Chapter Headings) | Specifies the given style that is used to demarcate chapter headings in a document. |
| name (Caption Type Name) | Specifies the literal string component of this caption. |
| noLabel (Do Not Include Name In Caption) | Specifies if the string specified in the name attribute shall be included in the resulting caption when it is automatically added to the document. If set to true, then the label text in the name attribute is omitted when adding the caption. |
| numFmt (Caption Numbering Format) | Specifies the format of the numbering which shall be included in an automatically generated caption to specify the index of this item in that collection (within the current chapter if chapNum is specified, or within the current document story). |
| pos (Automatic Caption Placement) | Specifies how an automatically inserted caption shall be positioned relative to the object that it is captioning. |
| sep (Chapter Number/Item Index Separator) | Specifies the character which shall be used to separate the chapter number used in this caption from the caption item numbering. A caption format consists of three components: |

#### captions (Caption Settings)

This element specifies the presence of information about captionsin a given WordprocessingML document. This information is divided into two components:

#### characterSpacingControl (Character-Level Whitespace Compression)

This element specifies how full-width characters in the current WordprocessingML document should be compressed to remove additional whitespace when the contents of this document are displayed, specifically by specifying the set(s) of characters which can be compressed to remove additional whitespace. [*Note*: The behavior of this element is functionally identical to the CSS text-justify-trim property. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the set(s) of characters which should be compressed when the contents of this document are displayed. |

#### clickAndTypeStyle (Paragraph Style Applied to Automatically Generated Paragraphs)

This element specifies the paragraph style, specified using the style element, which shall be applied to paragraphs which are automatically created when text is inserted into a WordprocessingML document in an area of the document that has no other style associated with it. This style is referenced via the val attribute, which stores the style ID of the style (stored in the styleId attribute on the style definition).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### clrSchemeMapping (Theme Color Mappings)

This element specifies the theme color, stored in the document's Theme part to which the value of this theme color shall be mapped. This mapping enables multiple theme colors to be chained together.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| accent1 (Accent 1 Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| accent2 (Accent 2 Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| accent3 (Accent3 Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| accent4 (Accent4 Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| accent5 (Accent5 Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| accent6 (Accent6 Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| bg1 (Background 1 Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| bg2 (Background 2 Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| followedHyperlink (Followed Hyperlink Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| hyperlink (Hyperlink Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| t1 (Text 1 Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |
| t2 (Text 2 Theme Color Mapping) | Specifies the theme color in the document's theme part which shall be used in place of this color when it is referenced by document content. |

#### compat (Compatibility Settings)

This element specifies a set of optional compatibility options for the current document.

#### consecutiveHyphenLimit (Maximum Number of Consecutively Hyphenated Lines)

This element specifies the maximum number of consecutive lines of text that can end with a hyphen when the contents of this document are displayed. Once this limit has been reached, the following line shall not be hyphenated regardless of whether or not it meets the criteria needed for hyphenation.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contain a decimal number. |

#### decimalSymbol (Radix Point for Field Code Evaluation)

This element specifies the character that shall be interpreted as the radix point when evaluating the contents of all fields in the current document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### defaultTableStyle (Default Table Style for Newly Inserted Tables)

This element specifies the table style which shall automatically be applied to the table properties of tables added to this document by an application. Note that it does not change the table style applied to tables which do not reference a style, instead, it automatically applies the style to that table via the tblStyle element (§17.4.62). This link is made by referencing the styleId attribute value of the table style which shall be used to format newly inserted tables.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### defaultTabStop (Distance Between Automatic Tab Stops)

This element specifies the value which shall be used as the multiplier to generate automatic tab stops in this document. *Automatic tab stops* refer to the tab stop locations which occur after all custom tab stops in the current paragraph have been surpassed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Measurement in Twentieths of a Point) | Specifies a positive measurement value, specified in twentieths of a point. This value is interpreted based on the context of the parent XML element. |

#### displayBackgroundShape (Display Background Objects When Displaying Document)

This element specifies whether the images and colors defined in the document's background using the background element (§17.2.1) shall be displayed when the document is displayed in print layout view (§17.18.102) as specified in the view element (§17.15.1.92).

#### displayHorizontalDrawingGridEvery (Distance between Horizontal Gridlines)

This element specifies the number of horizontal grid units defined using the drawingGridHorizontalSpacing element (§17.15.1.45) which shall be allowed between subsequent visible horizontal drawing grid lines in this document, if gridlines are being shown. [*Note*: The display of gridlines is an application-level setting not specified in ECMA-376. *end note*] The *drawing grid* is a grid which can be used by applications to help position floating objects in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contain a decimal number. |

#### displayVerticalDrawingGridEvery (Distance between Vertical Gridlines)

This element specifies the number of vertical grid units defined using the drawingGridVerticalSpacing element (§17.15.1.47) which shall be allowed between subsequent vertical gridlines in this document, if gridlines are being shown. [*Note*: The display of gridlines is an application-level setting not specified in ECMA-376. *end note*] The *drawing grid* is a grid which can be used by applications to help position floating objects in the document. If this element is omitted, then vertical gridlines shall not be displayed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contains a decimal number. |

#### documentProtection (Document Editing Restrictions)

This element specifies the set of document protection restrictions which have been applied to the contents of a WordprocessingML document. These restrictions should be enforced by applications editing this document when the enforcement attribute is turned on and ignored (but persisted) otherwise. *Document protection* is a set of restrictions used to prevent unintentional changes to all or part of a WordprocessingML document. [*Note*: This protection does not encrypt the document, and malicious applications might circumvent its use. This protection is not intended as a security feature. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algorithmName (Cryptographic Algorithm Name) | Specifies the specific cryptographic hashing algorithm which shall be used along with the salt attribute and input password in order to compute the hash value. |

#### documentType (Document Classification)

This element specifies the classification of a given WordprocessingML document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Document Classification Value) | Specifies the classification of the document based on the types defined in the referenced simple type definition. |

#### docVar (Single Document Variable)

This element specifies the parameters of a single document variable. A *document variable* is a storage location for arbitrary customer data in name/value pairs that is persisted in a given WordprocessingML document. Specifically, this element specifies through its name and val attributes the name and value pair for a given document variable.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Document Variable Name) | Specifies the name of the parent document variable. |
| val (Document Variable Value) | Specifies the value of the parent document variable. |

#### docVars (Document Variables)

This element specifies the presence of documentvariables in a WordprocessingML. A *document variable* is a storage location for arbitrary customer data in name/value pairs that is persisted in a given WordprocessingML document.

#### doNotAutoCompressPictures (Do Not Automatically Compress Images)

This element specifies that pictures in this document shall not automatically be compressed when saving the document in order to reduce the overall size of the resulting WordprocessingML document.

#### doNotDemarcateInvalidXml (Do Not Show Visual Indicator For Invalid Custom XML Markup)

This element specifies whether a visual cue should be displayed around content contained in a WordprocessingML document which is contained with custom XML markup specified via the customXml element when an application determines that the current XML markup (or its contents) violate the constraints of the attached XML schema(s).

#### doNotDisplayPageBoundaries (Do Not Display Visual Boundary For Header/Footer or Between Pages)

This element specifies whether applications displaying this document should display the contents of the header and footer when displaying the document in print layout view (§17.18.102) or should collapse those areas as well as the whitespace on all displayed pages so that the text extents are directly following one another. [*Rationale*: Collapsing the ends of pages makes it easier to read the contents of the document, since the text flows between pages without whitespace, while maintaining the WYSIWYG functionality of print layout view for the document's main content. *end rationale*]

#### doNotEmbedSmartTags (Remove Smart Tags When Saving)

This element specifies if any smart tags specified using the smartTag element shall be removed from the contents of this document before it is resaved. This setting shall also prevent the addition of new smart tags to the content of the document.

#### doNotHyphenateCaps (Do Not Hyphenate Words in ALL CAPITAL LETTERS)

This element specifies whether or not words comprised of all capital letters shall be hyphenated within a given document when automatic hyphenation is specified via the autoHyphenation element (§17.15.1.10).

#### doNotIncludeSubdocsInStats (Do Not Include Content in Text Boxes, Footnotes, and Endnotes in Document Statistics)

This element specifies if document content contained in text boxes, footnotes, and endnotes shall be excluded when an application calculates a given document’s statistics when these values are calculated and/or displayed by an application.

#### doNotShadeFormData (Do Not Show Visual Indicator For Form Fields)

This element specifies whether a visual cue should be displayed around form fields contained in a WordprocessingML document specified via the FORMTEXT, FORMCHECKBOX, or FORMDROPDOWN fields.

#### doNotTrackFormatting (Do Not Track Formatting Revisions When Tracking Revisions)

This element specifies that applications shall not track revisions made to the formatting of this WordprocessingML document when the trackRevisions element (§17.15.1.89) is turned on.

#### doNotTrackMoves (Do Not Use Move Syntax When Tracking Revisions)

This element specifies that applications shall not track revisions made to this WordprocessingML document as moves when the trackRevisions element (§17.15.1.89) is turned on, even when that syntax is appropriate. Instead, applications should use a standard insertion and deletion annotation syntax. Existing moves shall not be modified. [*Rationale*: This element is provided to enable interoperability with earlier word processing applications which do not understand moves. *end rationale*]

#### doNotUseMarginsForDrawingGridOrigin (Do Not Use Margins for Drawing Grid Origin)

This element specifies that the top-left corner of the page shall not be used as the origin for the drawing grid. The *drawing grid* is a virtual grid which can be used by applications to specify where drawing objects shall be positioned on a page when inserted (i.e. to ensure objects are aligned, etc.). If this element is present the grid shall start at the top-left edge of the page and not the text extents.

#### doNotValidateAgainstSchema (Do Not Validate Custom XML Markup Against Schemas)

If this element is omitted, then applications which support this functionality should attempt to validate the custom XML contents against any available related custom XML schema(s).

#### drawingGridHorizontalOrigin (Drawing Grid Horizontal Origin Point)

This element specifies the distance from of the left edge of the page which shall be used as the origin for the horizontal gridlines used by the drawing grid. The *drawing grid* is a virtual grid which might be used by applications to specify where drawing objects shall be positioned on a page when inserted (i.e. to ensure objects are aligned, etc.). Since the grid always covers the entire page when the doNotUseMarginsForDrawingGridOrigin element (§17.15.1.42) is specified, this element shall only affect the starting edge of the first horizontal gridline displayed (i.e. it only adjusts the grid by the modulus of the value against the width of one grid unit).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Measurement in Twentieths of a Point) | Specifies a positive measurement value, specified in twentieths of a point. This value is interpreted based on the context of the parent XML element. |

#### drawingGridHorizontalSpacing (Drawing Grid Horizontal Grid Unit Size)

This element specifies the width of horizontal grid units in this document. The *drawing grid* is a grid which can be used by applications to help position floating objects in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Measurement in Twentieths of a Point) | Specifies a positive measurement value, specified in twentieths of a point. This value is interpreted based on the context of the parent XML element. |

#### drawingGridVerticalOrigin (Drawing Grid Vertical Origin Point)

This element specifies the distance from of the top edge of the page which shall be used as the origin for the vertical gridlines used by the drawing grid. The *drawing grid* is a virtual grid which can be used by applications to specify where drawing objects shall be positioned on a page when inserted (i.e. to ensure objects are aligned, etc.). Since the grid always covers the entire page when the doNotUseMarginsForDrawingGridOrigin element (§17.15.1.42) is specified, this element shall only affect the starting edge of the first vertical gridline displayed (i.e. it only adjusts the grid by the modulus of the value against the width of one grid unit).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Measurement in Twentieths of a Point) | Specifies a positive measurement value, specified in twentieths of a point. This value is interpreted based on the context of the parent XML element. |

#### drawingGridVerticalSpacing (Drawing Grid Vertical Grid Unit Size)

This element specifies the width of vertical grid units in this document. The *drawing grid* is a grid which can be used by applications to help position floating objects in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Measurement in Twentieths of a Point) | Specifies a positive measurement value, specified in twentieths of a point. This value is interpreted based on the context of the parent XML element. |

#### forceUpgrade (Upgrade Document on Open)

This element specifies that the contents of this document can be upgraded and that the resulting document shall not have its functionality limited to only those functions compatible with earlier word processing applications. The only actions required as part of upgrading the document are:

#### formsDesign (Structured Document Tag Placeholder Text Should be Resaved)

This element specifies that the document was last saved while the placeholder text of all structured document tags in this document were being edited. This means that the placeholder text currently displayed in all structured document tags which are displaying the showingPlcHdr element (§17.5.2.39) shall be committed to the corresponding glossary document entry as specified using the docPart element (§17.12.5) when this document is opened, in order to ensure that the most recent placeholder text is stored in the glossary document entry. If the current placeholder text cannot be saved as a glossary document entry, then it should be modified as needed before saving.

#### gutterAtTop (Position Gutter At Top of Page)

This element specifies that a given WordprocessingML document’s gutter shall be positioned at the top of the document’s pages when the document is displayed. A *gutter* is the white space formed by the inner margins of two pages facing one another; such as the white space between the text on pages of a book when the book is opened.

#### hideGrammaticalErrors (Do Not Display Visual Indication of Grammatical Errors)

This element specifies whether a visual cue should be displayed around run content contained in a WordprocessingML document which has been flagged as a possible grammatical error using the proofErr element (§17.13.8.1) or via the application's own grammar engine.

#### hideSpellingErrors (Do Not Display Visual Indication of Spelling Errors)

This element specifies whether a visual cue should be displayed around run content contained in a WordprocessingML document which has been flagged as a possible spelling error using the proofErr element (§17.13.8.1) or via the application's own spelling engine.

#### hyphenationZone (Hyphenation Zone)

This element specifies the hyphenation zone which shall be used when automatically or manually hyphenating the contents of this document. The *hyphenation zone* is the amount of whitespace which can be left at the end of a line (or added to justified lines) before hyphenation should be attempted on the next word in the document (in order to reduce the amount of whitespace on the line). A smaller hyphenation zone should reduce the raggedness of the right edge of a given document's body text, as more words is hyphenated. Conversely, a larger hyphenation zone should increase the raggedness of the right edge of a given document's text, as fewer words is hyphenated.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Measurement in Twentieths of a Point) | Specifies a positive measurement value, specified in twentieths of a point. This value is interpreted based on the context of the parent XML element. |

#### ignoreMixedContent (Ignore Mixed Content When Validating Custom XML Markup)

This element specifies that applications should ignore all text content which is not contained within a leaf custom XML markup element when validating the contents of the custom XML markup in this document against one or more attached custom XML schema(s). A *leaf element* is a custom XML element which has no child custom XML elements (it is a leaf in the custom XML tree).

#### linkStyles (Automatically Update Styles From Document Template)

This element specifies that styles in the given document shall be updated to match the styles in the attached template specified using the attachedTemplate element (§17.15.1.6) when the document is opened by a hosting application. This setting enables the styles contained in documents with attached templates to stay synchronized with the styles used in the attached template.

#### listSeparator (List Separator for Field Code Evaluation)

This element specifies the character that shall be interpreted as a list item separator when evaluating the contents of all fields in the current document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### mirrorMargins (Mirror Page Margins)

This element specifies that the left and right margins defined in the section properties shall be swapped on every second page. [*Note:* Page numbering can be set arbitrarily, so the flip might not always be on the pages with even-numbered labels. *end note*]

#### noLineBreaksAfter (Custom Set of Characters Which Cannot End a Line)

This element specifies the set of characters which shall be restricted from ending a line for runs of text which shall be subject to custom line breaking logic using the kinsoku element (§17.3.1.16) when the contents of the document are displayed. This constraint shall only apply to text which has been flagged in the language of this rule via the lang element (§17.3.2.20) or automatic detection methods outside the scope of ECMA-376.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lang (Language For Which Custom Line Breaking Rule Applies) | Specifies the language of text for which the parent custom line breaking rule shall be applied. Applications supporting this functionality shall support custom line breaking for the following four languages: |
| val (Characters For Custom Line Breaking Rule) | Specifies the set of characters which shall be included in the custom line breaking rule. |

#### noLineBreaksBefore (Custom Set Of Characters Which Cannot Begin A Line)

This element specifies the set of characters which shall be restricted from beginning a new line for runs of text which shall be subject to custom line breaking logic using the kinsoku element (§17.3.1.16) when the contents of the document are displayed. This constraint shall only apply to text which has been flagged in the language of this rule via the lang element (§17.3.2.20) or automatic detection methods outside the scope of ECMA-376.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lang (Language For Which Custom Line Breaking Rule Applies) | Specifies the language of text for which the parent custom line breaking rule shall be applied. Applications supporting this functionality shall support custom line breaking for the following four languages: |
| val (Characters For Custom Line Breaking Rule) | Specifies the set of characters which shall be included in the custom line breaking rule. |

#### noPunctuationKerning (Never Kern Punctuation Characters)

This element specifies that punctuation characters shall not be kerned in the current document when kerning is enabled on a run using the kern element (§17.3.2.19). *Kerning* refers to a process by which a hosting application shall reduce the spacing of adjacent characters and/or punctuation to improve the visual appearance of text. Well kerned text has a similar amount of blank space between each pair of characters and/or each set of a character and punctuation symbol. When kerning is enabled, Latin text shall always be kerned, and this option shall control whether punctuation characters are also kerned.

#### printFormsData (Only Print Form Field Content)

This element specifies that printing the contents of this document shall only print the contents of WordprocessingML form fields defined using the FORMTEXT, FORMCHECKBOX, and FORMDROPDOWN field codes in their current locations on the page - all other document contents shall be suppressed.

#### printFractionalCharacterWidth (Print Fractional Character Widths)

This element specifies the contents of this document shall be printed with fractional character widths. *Fractional character widths* exist when the spacing between characters is not constant (i.e. a proportional font face is used).

#### printPostScriptOverText (Print PostScript Codes With Document Text)

This element specifies that the PostScript codes specified in WordprocessingML documents containing PRINT fields shall be included in foreground (on the same Z-order as text) with the data printed in the contents of a given WordprocessingML document.

#### printTwoOnOne (Print Two Pages Per Sheet)

This element specifies whether two pages should be printed on one sheet of paper when this document is printed. Specifically, this element specifies that each page displayed for the contents in a given WordprocessingML document should be the page size specified in the section settings divided in half with two top margins originating from the bisector of the page, and bottom margins instantiated at the top and bottom of each page.

#### proofState (Spelling and Grammatical Checking State)

This element specifies if the grammar and spell-checking engines of the last application to process this document completed checking the grammar and spelling of the document before the document was last saved. Applications which modify the document contents without checking spelling or grammar should reset these states as needed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| grammar (Grammatical Checking State) | Specifies if an application's grammar checking engine completed checking the grammatical content of the document when it was last saved. |
| spelling (Spell Checking State) | Specifies if an application's spell-checking engine completed checking the spelling of the document when it was last saved. |

#### readModeInkLockDown (Freeze Document Layout)

This element specifies the exact set of page and text sizing parameters which shall be used to display the contents of a WordprocessingML document. [*Rationale*: This setting is typically used for documents that have been annotated using ink. This setting freezes the document's presentation such that the ink annotations must exist at the same position of the WordprocessingML document irrespective of the monitor on which the WordprocessingML document is rendered. *end rationale*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| actualPg (Use Actual Pages, Not Virtual Pages) | Specifies if applications shall render this WordprocessingML document with actual pages, not virtual pages. A*ctual pages* are pages rendered as they is printed. |
| fontSz (Font Size Scaling) | Specifies the percentage that text in a given WordprocessingML document shall be scaled by before it is displayed on a virtual page, including a trailing percent sign (U+0025). |
| h (Virtual Page Height) | Specifies the height of the virtual pages which shall be used in this document. This value is specified in pixels. |
| w (Virtual Page Width) | Specifies the width of the virtual pages which shall be used in this document. This value is specified in pixels. |

#### removeDateAndTime (Remove Date and Time from Annotations)

This element specifies that the date and time information shall be removed from all annotations which are present in the current document when it is saved. Annotations store this information in the date attribute on the annotation's XML element.

#### removePersonalInformation (Remove Personal Information from Document Properties)

This element specifies that hosting applications shall remove all personal information of document authors upon saving a given WordprocessingML document. The definition and extent of personal information is not defined by ECMA-376.

#### revisionView (Visibility of Annotation Types)

This element specifies which forms of annotations shall be visible for a WordprocessingML document when it is displayed. This setting shall not affect whether annotations are added or persisted, it shall only affect the display of the annotations which exist in the document's contents (persisted or in memory).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| comments (Display Comments) | Specifies if comments should be included when the contents of this document are displayed. |
| formatting (Display Formatting Revisions) | Specifies if revisions to properties (i.e. formatting revisions) should be included when the contents of this document are displayed. |
| inkAnnotations (Display Ink Annotations) | Specifies if ink annotations should be included when the contents of this document are displayed. |
| insDel (Display Content Revisions) | Specifies if revisions to content (i.e. insertions, deletions, and moves) should be included when the contents of this document are displayed. |
| markup (Display Visual Indicator Of Markup Area) | Specifies if the application shall visually indicate any additional non-printing area used to display annotations when the annotations in this document are displayed. |

#### rsid (Single Session Revision Save ID)

This element specifies the revision save ID that was associated with a single editing session for a document. An editing session is a span of time that begins and ends with any event that produces an editable file, such as a save or an e-mail send, and contains no such event. When revision-save IDs are added to a document, they shall follow these rules:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Long Hexadecimal Number Value) | Specifies a number value specified as a four digit hexadecimal number), whose contents of this decimal number are interpreted based on the context of the parent XML element. |

#### rsidRoot (Original Document Revision Save ID)

This element specifies the revision save ID which was associated with the first editing session for this document. [*Note*: This information must be identical between any number of copies of the same document, as they all originate from the same original editing session. Applications can use this information as desired. *end note*] If this element is omitted, then the original document revision save ID is unknown.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Long Hexadecimal Number Value) | Specifies a number value specified as a four digit hexadecimal number), whose contents of this decimal number are interpreted based on the context of the parent XML element. |

#### rsids (Listing of All Revision Save ID Values)

This element specifies the set of revision save ID values for the current document. *Revision save ID values* refer to four-digit hexadecimal values which uniquely identify an editing session in the life of the current document. An *editing session* is the period of time between two subsequent save operations by an application.

#### saveFormsData (Only Save Form Field Content)

This element specifies that saving the contents of this document shall only save the contents of WordprocessingML form fields defined using the FORMTEXT, FORMCHECKBOX, and FORMDROPDOWN field codes in a comma-delimited text format which does not conform to ECMA-376 (i.e. it is a one-way export from a WordprocessingML document).

#### saveInvalidXml (Allow Saving Document As XML File When Custom XML Markup Is Invalid)

This element specifies that this document should be capable of being saved into a format consisting of a single XML file (not defined by ECMA-376) even when its contents are invalid based XML schema validation of the custom XML markup contained in the document. This setting has no effect on documents that do not contain custom XML markup, or that do contain custom XML markup but do not have a schema attached. [*Guidance*: Because this setting specifies behavior when saving to an alternative file format not defined by ECMA-376, this behavior is optional. *end guidance*]

#### savePreviewPicture (Generate Thumbnail For Document On Save)

This element specifies if a document's Thumbnail part should be generated for the contents of the first page of this document when saved by application which support document thumbnail generation.

#### saveThroughXslt (Custom XSL Transform To Use When Saving As XML File)

This element specifies the location of a custom XSL transform that shall be used when this document is saved as a single XML file (in an application-defined format). [*Guidance*: Because this setting specifies behavior when saving to an alternative file format not defined by ECMA-376, this behavior is optional. *end guidance*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (XSL Transformation Location) | Specifies an explicit relationship to the location of the XSL Transformation which shall be applied. |
| solutionID (Local Identifier for XSL Transform) | Specifies a string identifier that can be used to locate the XSL transform to be applied. The semantics of this attribute are application-defined - applications can use this information in any application-defined manner to resolve the location of the XSL transform to apply. |

#### saveXmlDataOnly (Only Save Custom XML Markup)

This element specifies that the contents of this document shall be saved as an XML file containing only the custom XML markup in this document in its regular form. The resulting document does not conform to ECMA376 (i.e. this is an export-only save option for a WordprocessingML document).

#### settings (Document Settings)

This element specifies the settings that are applied to a WordprocessingML document. This element is the root element of the Document Settings part in a WordprocessingML document.

#### showEnvelope (Show E-Mail Message Header)

This element specifies that an e-mail message header shall be displayed when this document is opened, if an email header is supported by the application opening the file.

#### showXMLTags (Show Visual Indicators for Custom XML Markup Start/End Locations)

This element specifies that some visual indicator shall be provided for the start and end locations of custom XML markup present in this document, if any.

#### smartTagType (Supplementary Smart Tag Information)

This element specifies optional supplementary information about one or more smart tags (§17.5.1.9) used in the current WordprocessingML document. This supplementary data is linked to the smart tag to which it applies via its name and namespaceuri attributes.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Smart Tag Name) | Specifies the name of the smart tag within the document for which supplementary data is provided. |
| namespaceuri (Smart Tag Namespace) | Specifies the namespace URI of the smart tag for which supplementary data is provided. |
| url (Smart Tag Supplementary URL) | Specifies a URL provided for a particular smart tag type in this document. [*Note*: This URL is typically used to provide access to a URL for additional updates to this smart tag type as requested by the smart tag provider. *end note*] |

#### strictFirstAndLastChars (Use Strict Kinsoku Rules for Japanese Text)

This element specifies that the strict set of Kinsoku rules shall be applied to Japanese text in this document when the kinsoku element (§17.3.1.16) is applied to that text. The resulting line breaking rules are provided on the kinsoku element.

#### styleLockQFSet (Prevent Replacement of Styles Part)

This element specifies whether applications shall prevent the replacement of the complete set of styles stored in the Styles part when editing this document. This setting should not preclude the editing or removal of individual styles, instead, it should only prevent the removal and replacement of the entire styles part in a single operation (either through a user interface or a programmatic operation).

#### styleLockTheme (Prevent Modification of Themes Part)

This element specifies whether applications shall prevent the modification of the document's theme information stored in the Theme part when editing this document. This setting should not preclude the use of the theme information, instead, it should only prevent the modification of the theme part in a single operation (either through a user interface or a programmatic operation).

#### stylePaneFormatFilter (Suggested Filtering for List of Document Styles)

This element specifies a set of suggested filters which should be applied to the list of document styles in this application if the styles are displayed in a user interface.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| allStyles (Display All Styles) | Specifies that all styles present in the Styles part should be displayed in the list of document styles. |
| alternateStyleNames (Use the Alternate Style Name) | Specifies that primary names for styles should not be shown if an alternate name using the name element (§17.7.4.9) exists. |
| clearFormatting (Display Styles to Remove Formatting) | Specifies that a style should be present which removes all formatting and styles from text. |
| customStyles (Display Only Custom Styles) | Specifies that only styles with the customStyle attribute should be displayed in the list of document styles. |
| directFormattingOnNumbering (Display Direct Formatting on Numbering Data) | Specifies that all unique forms of direct formatting of numbering data should be displayed in the list of document styles as though they were each a unique style. |
| directFormattingOnParagraphs (Display Paragraph Level Direct Formatting) | Specifies that all unique forms of paragraph-level direct formatting should be displayed in the list of document styles as though they were each a unique style. |
| directFormattingOnRuns (Display Run Level Direct Formatting) | Specifies that all unique forms of run-level direct formatting should be displayed in the list of document styles as though they were each a unique style. |
| directFormattingOnTables (Display Direct Formatting on Tables) | Specifies that all unique forms of direct formatting of tables should be displayed in the list of document styles as though they were each a unique style. |
| headingStyles (Display Heading Styles) | Specifies that heading styles (styles with a styleId of Heading1 to Heading9) should be displayed in the list of document styles when the previous style is used in the document and/or is present in the Styles part. |
| latentStyles (Display Latent Styles) | Specifies that all latent styles should be displayed in the list of document styles. |
| numberingStyles (Display Numbering Styles) | Specifies that numbering styles should be displayed in the list of document styles. |
| stylesInUse (Display Styles in Use) | Specifies that only styles used in the document should be displayed in the list of document styles. |
| tableStyles (Display Table Styles) | Specifies that table styles should be displayed in the list of document styles. |
| top3HeadingStyles (Display Heading 1 through 3) | Specifies that heading styles with a styleId of Heading1 to Heading3 should always be displayed in the list of document styles. |
| visibleStyles (Only Show Visible Styles) | Specifies that styles should only be shown if the semiHidden element (§17.7.4.16) is false and the hidden element (§17.7.4.4) is false. |

#### stylePaneSortMethod (Suggested Sorting for List of Document Styles)

This element specifies a sorting which should be applied to the list of styles in this document if the styles are displayed in a user interface.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Style Sorting) | Specifies a sort order which should be applied to the list of document styles when they are displayed in a user interface. |

#### summaryLength (Percentage of Document to Use When Generating Summary)

This element specifies the size for automatic document summaries performed on the content of a WordprocessingML document. An *automatic document summary* is a subset of text contained in a document deemed by the hosting application to summarize the content of the WordprocessingML document. The val attribute of this element specifies the size of an automatic document summary to be performed on a given WordprocessingML document as a percentage of the total size of the given WordprocessingML document. Performing an automatic document summary is a runtime operation outside the scope of ECMA-376.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value in Percent) | Specifies a measurement in whole percentage points, with a trailing percent sign (U+0025). |

#### themeFontLang (Theme Font Languages)

This element specifies the language which shall be used to determine the appropriate theme fonts in the document's Theme part which map to the major/minor theme fonts. Specifically, the bidi attribute is used to determine the theme font applied to complex script text, the eastAsia attribute is used to determine the theme font applied to East Asian text, and the val attribute is used to determine the theme font applied to all other text.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bidi (Complex Script Language) | Specifies the language which shall be used when processing the contents of this run which use complex script characters, as determined by the Unicode character values of the run content. |
| eastAsia (East Asian Language) | Specifies the language which shall be used when processing the contents of this run which use East Asian characters, as determined by the Unicode character values of the run content. |
| val (Latin Language) | Specifies the language which shall be used to check spelling and grammar (if requested) |

#### trackRevisions (Track Revisions to Document)

This element specifies that applications shall track revisions made to the WordprocessingML document. *Revisions* are changes to a WordprocessingML document which are recorded such that they can be viewed independently, accepted, or removed, and reverted if needed. When revisions are tracked, the resulting WordprocessingML markup in the Revisions subclause of this document describes the necessary syntax.

#### updateFields (Automatically Recalculate Fields on Open)

This element specifies whether the fields contained in this document should automatically have their field result recalculated from the field codes when this document is opened by an application which supports field calculations. [*Note*: Some fields are always recalculated (e.g. the page numbering), therefore this element only affects fields which are typically not automatically recalculated on opening the document. Also note that this setting must not supersede any document protection (§17.15.1.29) or write protection (§17.15.1.93) settings.

#### useXSLTWhenSaving (Save Document as XML File through Custom XSL Transform)

This element specifies that this document should be saved through the custom XSLT transform defined by the saveThroughXslt element (§17.15.1.76) in this document when it is saved as a single XML file (not defined by ECMA-376). [*Guidance*: Because this setting specifies behavior when saving to an alternative file format not defined by ECMA-376, this behavior is optional. *end guidance*]

#### view (Document View Setting)

This element specifies the manner in which the contents of this document should be displayed when opened by an application. [*Note*: Although this Standard is for a file format, occasionally, guidance is given regarding intent in dealing with things outside that file format, such as the rendering of documents to a screen or printer. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Document View Setting Value) | Specifies the view that shall be used to render the contents of a WordprocessingML document. |

#### writeProtection (Write Protection)

This element specifies the write protection settings which have been applied to a WordprocessingML document. *Write protection* refers to a mode in which the document's contents cannot be edited, and the document cannot be resaved using the same file name. This setting is independent of the documentProtection (§17.15.1.29) element, but like document protection, this setting is not intended as a security feature and can be ignored.

|  |  |  |
| --- | --- | --- |
| **Attributes** | | **Description** |
| algorithmName (Cryptographic Algorithm Name) | | Specifies the specific cryptographic hashing algorithm which shall be used along with the salt attribute and input password in order to compute the hash value. |
| hashValue (Password Hash Value) | Specifies the hash value for the password stored with this document. This value shall be compared with the resulting hash value after hashing the user-supplied password using the algorithm specified by the preceding attributes and parent XML element, and if the two values match, the protection shall no longer be enforced. | |
| recommended (Recommend Write Protection in User Interface) | Specifies that applications should provide user interface recommending that the user open this document in write protected state. If the user chooses to do so, the document shall be write-protected, otherwise, it shall be opened fully editable. | |
| saltValue (Salt Value for Password Verifier) | Specifies the salt which was prepended to the user-supplied password before it was hashed using the hashing algorithm defined by the preceding attribute values to generate the hashValue attribute, and which shall also be prepended to the user-supplied password before attempting to generate a hash value for comparison. A *salt* is a random string which is added to a user-supplied password before it is hashed in order to prevent a malicious party from pre-calculating all possible password/hash combinations and simply using those pre-calculated values (often referred to as a "dictionary attack"). | |
| spinCount (Iterations to Run Hashing Algorithm) | Specifies the number of times the hashing function shall be iteratively run (runs using each iteration's result plus a 4 byte value (0-based, little endian) containing the number of the iteration as the input for the next iteration) when attempting to compare a user-supplied password with the value stored in the hashValue attribute. | |

#### zoom (Magnification Setting)

This element specifies the magnification level which should be applied to a document when it is displayed by an application. The zoom level is specified with the use of two attributes stored on this element:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| percent (Zoom Percentage) | Specifies the zoom percentage that should be applied when a given WordprocessingML document is rendered by conforming hosting applications. This value is the zoom percentage specified as an integer with a trailing percent sign (U+0025). |
| val (Zoom Type) | Specifies the type of zoom which shall be applied to a given document on open. |

### Web Page Settings

The next group of settings stored in WordprocessingML is web page settings. These settings specify two categories of settings:

#### allowPNG (Allow PNG as Graphic Format)

This element specifies that applications shall allow use of the PNG file format when the contents of this WordprocessingML document are saved as a web page. This includes all supporting images used as part of this HTML web page.

#### blockQuote (Data for HTML blockquote Element)

This element specifies that the current div element does not represent an HTML div element, but rather represents an HTML blockquote element. This element shall specify that this container shall be written out using the blockquote element if this document is subsequently saved as HTML.

#### bodyDiv (Data for HTML body Element)

This element specifies that the current div element does not represent an HTML div element, but rather represents formatting properties on the HTML body element. This element shall specify that the properties specified by this container shall be written out onto the body element if this document is subsequently saved as HTML.

#### bottom (Bottom Border for HTML div)

This element specifies the border which shall be displayed at the bottom of the boundaries of the current HTML div object.

#### color (Frameset Splitter Color)

This element specifies the color of the splitters within the frameset in this WordprocessingML document. This element shall only be honored on the root frameset for this document and can be ignored for all nested framesets in this document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| themeColor (Run Content Theme Color) | Specifies a theme color which should be applied to the current run. |
| themeShade (Run Content Theme Color Shade) | Specifies the shade value applied to the supplied theme color (if any) for this run’s contents. |
| themeTint (Run Content Theme Color Tint) | Specifies the tint value applied to the supplied theme color (if any) for this run’s contents. |
| val (Run Content Color) | Specifies the color for this run. |

#### div (Information About Single HTML div Element)

This element specifies information about a single HTML div, body, or blockquote element, which was included in this document, so that that information (which is stored on a logical structure with no direct analog in WordprocessingML) can be maintained when an HTML document is stored in the WordprocessingML format.

|  |  |
| --- | --- |
| Attributes | Description |
| id (div Data ID) | Specifies a unique decimal number which shall be used to associate one or more structures in the WordprocessingML content with this HTML div information. |

#### divBdr (Set of Borders for HTML div)

This element specifies the set of borders for the boundaries of the current HTML div, body, or blockquote element, using the four border types defined by its child elements.

#### divs (Information about HTML div Elements)

This element specifies all information about the set of HTML div elements (as well as the body and blockquote elements) which were included in this document, so that that information (which is stored on a logical structure with no direct analog in WordprocessingML) can be maintained when an HTML document is stored in the WordprocessingML format.

#### divsChild (Child div Elements Contained within Current div)

This element specifies the set of HTML div or blockquote elements which are contained within the current HTML div, body, or blockquote element, establishing the parent/child hierarchy of the original set of these elements.

#### doNotOrganizeInFolder (Do Not Place Supporting Files in Subdirectory)

This element specifies that applications shall not automatically place all supporting files (images which are part of this HTML web page, etc.) in a subdirectory when the contents of this WordprocessingML document are saved as a web page. Typically, applications which save a document as a web page consisting of multiple files save all supporting files in a subdirectory next to the main HTML file (in order to keep those files organized). This element specifies the files shall be placed in the same directory as the actual web page.

#### doNotRelyOnCSS (Do Not Rely on CSS for Font Face Formatting)

This element specifies whether applications can rely on the CSS properties for font face (the font-family property) when saving this WordprocessingML document as a web page. If this element is utilized, then the HTML font element should be used either in place of or in concert with these CSS properties in order to specify the font face formatting for the resulting web page.

#### doNotSaveAsSingleFile (Recommend Web Page Format over Single File Web Page Format)

This element specifies that applications should recommend that new web page files generated using this WordprocessingML document use a multi-file web page format (HTML), rather than a single-file web page format (MHTML) when this document is saved as an HTML web page. This setting shall not prevent the use of the MHTML format; it shall only cause applications to recommend (via a default) a non-single-file format when saving as a web page.

#### doNotUseLongFileNames (Do Not Use File Names Longer than 8.3 Characters)

This element specifies that applications shall ensure that the file names for all files generated when saving this document as a web page do not exceed eight octets with a three octet extension. This includes all supporting files (images which are part of this HTML web page, etc.). The file names generated are not case-sensitive.

#### encoding (Output Encoding When Saving as Web Page)

This element specifies the encoding which shall be used for the contents of this WordprocessingML document when it is saved as an HTML web page. The set of encodings supported by this element shall be derived from the standard set of character set definitions provided at http://www.iana.org/assignments/character-sets.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### flatBorders (Frameset Splitter Border Style)

This element specifies the 3D style of the splitters within the frameset in this WordprocessingML document. This element shall only be honored on the root frameset for this document and can be ignored for all nested framesets in this document. When this property is turned on, the borders for this frameset shall be flat (not 3D), otherwise they can be presented as 3D splitter when they are displayed.

#### frame (Single Frame Properties)

This element specifies the properties for a single frame within a frameset document. When a document defines a frameset using the frameset element; that frameset is composed of a set of frames, each of which is specified by a single frame element.

#### frameLayout (Frameset Layout)

This element specifies the order in which the frames (and nested framesets) in a frameset shall be displayed. When a frameset is created, it can only contain frames which are stacked in one direction:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Frameset Layout Value) | Specifies the type of layout which shall be used to display the contents of the frames and nested framesets within this frameset, as defined by the simple type referenced below. |

#### frameset (Nested Frameset Definition)

This element specifies a frameset which has been nested within another frameset within a WordprocessingML document. This WordprocessingML element is analogous to the frameset element in HTML (when that frameset is the child of another frameset element).

#### frameset (Root Frameset Definition)

This element specifies that this document is the container for a frameset. This WordprocessingML element is analogous to the frameset element in HTML.

#### framesetSplitbar (Frameset Splitter Properties)

This element specifies the properties for the splitters associated with this frameset. A *splitter* is a horizontal or vertical line which visually separates the contents of one frame from another within a frameset.

#### left (Left Border for HTML div)

This element specifies the border which shall be displayed at the left of the boundaries of the current HTML div object.

#### linkedToFile (Maintain Link to Existing File)

This element specifies that the file referenced by the sourceFileName element (§17.15.2.38) as the basis for the current frame shall not be changed, even when the file defined by the parent frameset is moved - i.e. the link shall remain exactly as specified.

#### longDesc (Frame Long Description)

This element specifies an explicit relationship whose target is the long description of the frame. This description should supplement the short description provided by the title element. This property is analogous to the longdesc attribute on the frame element in HTML.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

#### marBottom (Bottom Margin for HTML div)

This element specifies the margin which shall be displayed at the bottom of the boundaries of the current HTML div object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Positive or Negative Value in Twentieths of a Point) | Specifies a positive or negative measurement in twentieths of a point (equivalent to 1/1440th of an inch). |

#### marH (Top and Bottom Margin for Frame)

This element specifies the top and bottom margin height for a single frame in a frameset document, as follows:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Measurement in Pixels) | Specifies a value whose contents shall contain a positive whole number, whose contents consist of a positive measurement in pixels. |

#### marLeft (Left Margin for HTML div)

This element specifies the margin which shall be displayed at the left of the boundaries of the current HTML div object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Positive or Negative Value in Twentieths of a Point) | Specifies a positive or negative measurement in twentieths of a point (equivalent to 1/1440th of an inch). |

#### marRight (Right Margin for HTML div)

This element specifies the margin which shall be displayed at the right of the boundaries of the current HTML div object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Positive or Negative Value in Twentieths of a Point) | Specifies a positive or negative measurement in twentieths of a point (equivalent to 1/1440th of an inch). |

#### marTop (Top Margin for HTML div)

This element specifies the margin which shall be displayed at the top of the boundaries of the current HTML div object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Positive or Negative Value in Twentieths of a Point) | Specifies a positive or negative measurement in twentieths of a point (equivalent to 1/1440th of an inch). |

#### marW (Left and Right Margin for Frame)

This element specifies the left and right margin height for a single frame in a frameset document, as follows:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Measurement in Pixels) | Specifies a value whose contents shall contain a positive whole number, whose contents consist of a positive measurement in pixels. |

#### name (Frame Name)

This element specifies the name of a single frame within a frameset document. This property is analogous to the name attribute on the frame element in HTML.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### noBorder (Do Not Display Frameset Splitters)

This element specifies whether the splitters shall be displayed for the contents of the frameset in this WordprocessingML document. This element shall only be honored on the root frameset for this document and can be ignored for all nested framesets in this document. If this element is present, then no splitters shall be displayed, and all other frameset splitter properties can be ignored.

#### noResizeAllowed (Frame Cannot Be Resized)

This element specifies whether or not the size of the current frame shall be modifiable (i.e. whether the frame can be resized) when the contents of this document are saved as HTML and displayed in a web browser. When this element is set, the size of the frame shall be set to its current values. This property is analogous to the noresize attribute on the frame element in HTML.

#### optimizeForBrowser (Disable Features Not Supported by Target Web Profile)

This element specifies whether applications should attempt to customize the output for any web page produced from this document, as well as the HTML output to which it should be customized. [*Example*: This might involve blocking any output which is not supported by that target output profile. *end example*] The target output profile is identified by the contents of the target attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| target (Target Output Profile) | Specifies the version of HTML output targeted by the output of any web page produced by this document. This attribute shall only contain a string that represents an output profile defined by published standards and W3C recommendations. Product names shall not be used to define a profile. |
| val (On/Off Value) | Specifies a binary value for the property defined by the parent XML element. |

#### pixelsPerInch (Pixels per Inch for Graphics/Images)

This element specifies the number of pixels per inch (or density) that is used for the display of pictures or table cells when a WordprocessingML document is saved as a web page. The size that is specified by this element affects the size of the pictures or table cells relative to the size of text in the document. The pixels per inch (ppi) measurement is relative to the screen resolution, and the resulting physical dimensions of the resulting image or cell in pixels (which are used in web pages, but not for printed documents) are the result of the original dimensions (in inches) multiplied by the number of pixels per inch.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

#### right (Right Border for HTML div)

This element specifies the border which shall be displayed at the right of the boundaries of the current HTML div object.

#### saveSmartTagsAsXml (Save Smart Tag Data in XML Property Bag)

This element specifies that the information pertaining to all smart tags () in the current document shall be saved into a separate XML-based property bag at the head of the web page when this WordprocessingML document is saved as a web page.

#### scrollbar (Scrollbar Display Option)

This element specifies when a scrollbar shall be visible for the contents of the current frame. When this element is set, the val attribute determines exactly when the scrollbar shall be visible. This property is analogous to the scrolling attribute on the frame element in HTML.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Scrollbar Display Option Value) | Specifies the criteria under which a scrollbar shall be displayed along with the contents of this frameset, as defined by the simple type referenced below. |

#### sourceFileName (Source File for Frame)

This element specifies the ID for the relationship which specifies the source file for a single frame within a frameset document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

#### sz (Frame Size)

This element specifies the size for a single frame within a frameset.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### sz (Nested Frameset Size)

This element specifies the size for a frameset that has been nested within another frameset. If this size appears on a root frameset, then it can be ignored, and the main frameset shall encompass the entire window.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### targetScreenSz (Target Screen Size for Web Page)

This element specifies the ideal minimum target screen size (width by height, specified in pixels) on which web pages generated when saving this document is displayed. This setting can be used to optimize the output of web pages produced from this document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Target Screen Size Value) | Specifies the target screen size for web pages produced by this document, as defined by the simple type referenced below. |

#### title (Frame or Frameset Title)

This element specifies advisory information about a single frame or frameset. The title information shall be stored in this element’s val attribute. This property is analogous to the title attribute on the frame or frameset element in HTML.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

#### top (Top Border for HTML div)

This element specifies the border which shall be displayed at the top of the boundaries of the current HTML div object.

#### w (Frameset Splitter Width)

This element specifies the width of the splitters within the frameset in this WordprocessingML document. This element shall only be honored on the root frameset for this document and can be ignored for all nested framesets in this document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Measurement in Twentieths of a Point) | Specifies a positive measurement value, specified in twentieths of a point. This value is interpreted based on the context of the parent XML element. |

#### webSettings (Web Page Settings)

This element specifies the set of web page settings that have been specified for a single WordprocessingML document. This element is the root element for the Web Settings part within a WordprocessingML document.

### Language Compatibility Settings

The last group of settings in WordprocessingML are language compatibility settings. *Language compatibility settings* are optional settings used to specify changes appropriate to a subset of languages, but not usually appropriate in others. [*Example*: The doNotLeaveBackslashAlone setting changes the visual appearance of a specific character to match user expectation based on a historical use of that character in some code pages – users who have used those code pages would expect one value; those who have not would expect another. *end example*]. The behavior of each setting is fully defined in this subclause.

#### adjustLineHeightInTable (Add Document Grid Line Pitch To Lines in Table Cells)

This element specifies whether a document grid defined using the docGrid element (§17.6.5) that specifies a line grid (manually adding additional pitch to each line in the section) shall also be applied to lines within table cells in this section.

#### applyBreakingRules (Use Legacy Ethiopic and Amharic Line Breaking Rules)

This element specifies whether applications shall use a legacy set of line breaking rules when determining line breaks for text consisting of Ethiopic and/or Amharic characters.

#### balanceSingleByteDoubleByteWidth (Balance Single Byte and Double Byte Characters)

This element specifies whether applications shall balance the width of Single Byte Character Set characters and Double Byte Character Set characters when rendering WordprocessingML documents. Specifically, this element specifies to adjust the fixed pitch fonts’ half-width space character and full-width space character to attain a 1 to 2 ratio.

#### compatSetting (Custom Compatibility Setting)

This element specifies a custom compatibility setting. The semantics for this element are implementation-defined. [*Note*: This element can be used to store the transitional compatibility settings specified in Part 4 of ECMA-376. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name of Setting) | Specifies the name of a custom compatibility setting. |
| uri (Namespace of Setting) | Specifies the namespace under which the compatibility setting is defined. |
| val (Value of Setting) | Specifies the value of a custom compatibility setting. |

#### doNotExpandShiftReturn (Don't Justify Lines Ending in Soft Line Break)

This element specifies whether applications should fully justify the contents of incomplete lines which end in a soft line break when the parent paragraph is fully justified using the jc element (§17.3.1.13).

#### doNotLeaveBackslashAlone (Display Backslash As Yen Sign)

This element specifies whether applications should autodisplay the backslash character using the yen character when displaying the contents of this document.

#### spaceForUL (Add Additional Space Below Baseline For Underlined East Asian Text)

This element specifies whether East Asian content in a WordprocessingML document which has been underlined using the u element shall have additional descent added to the properties of the font in order to ensure that there is adequate spacing between the characters in the font and the underlining applied to the text.

#### ulTrailSpace (Underline All Trailing Spaces)

This element specifies whether applications shall display underlining beneath all trailing spaces in the contents of a line when those contents are underlined. *Trailing spaces* are all space characters which are not followed by non-space characters on the same line.

## Fields and Hyperlinks

Most text in a word processing document is static; that is, unless it is directly changed as the result of editing, its contents remain the same, no matter how the rest of the document might change. However, certain useful pieces of information can change value over the life of a document. Consider the case of a reference to a page number, as in "For more information on this topic, see page 56." Clearly, hard coding the page number as 56 means that that number needs to be manually replaced as the document's size or layout is changed. Even a simple change to any margin, line spacing, or font size can invalidate such references.

### Syntax

The syntax rules in this subclause follow the system shown in ISO/IEC 14977: literal text is surrounded by double-quotes (or by apostrophes); the left-square-bracket and right-square-bracket designate the start and end of an option; the left-curly-bracket and right-curly-bracket designate the start and end of a sequence of one-or-more items; the vertical-line indicates an alternative; and each rule ends with a semicolon. Whenever hyphen is used as the exception-symbol (as per ISO/IEC 14977), it is surrounded by white space, and further clarified by a comment.

### XML representation

Fields shall be implemented in XML using either of two approaches:

### Formulas and expressions

A field instruction can involve a calculation via a *formula*, which is simply an *expression* that is an arbitrary complex arithmetic expression involving constants (§17.16.3.1), bookmarks that refer to *expression*s (§17.16.3.2), arithmetic and logical operators (§17.16.3.3), functions (§17.16.3.4), values of cells in a table (§17.16.3.5), and *field*s that result in a single value. *expression* can contain grouping parentheses to document the default precedence or to override it.

#### Constants

A constant is a number. Exponents are not supported.

#### Bookmarks

Any arbitrary piece of text and/or graphics in a WordprocessingML document can be assigned a name, called a *bookmark*. If a bookmark references text that represents an *expression*, that bookmark's name can be used as an operand in another *expression*. If a whole field is bookmarked, its bookmark name can also be used as an operand in an *expression*. [*Example*: Given that X is a bookmark for the text 4, Y is a bookmark for the text 2, and Result is a bookmark for the following field:

#### Operators

The *operator*s permitted in *expression* are:

|  |  |  |
| --- | --- | --- |
| Operator | Description | Precedence |
| - | Unary minus | highest |
| ^ | Powers and roots |  |
| \* | Multiplication |  |
| / | Division |  |
| % | Percentage |  |
| + | Addition |  |
| - | Subtraction |  |
| = | Equal to |  |
| <> | Not equal to |  |
| < | Less than | lowest |
| <= | Less than or equal to |  |
| > | Greater than |  |
| >= | Greater than or equal to |  |

#### Functions

A *function* is a predefined procedure that computes and returns a result. Functions defined below with a parameter list of *list* accept two or more arguments separated by commas (,) or semicolons (;). As to which separator is permitted, is defined by the document's listSeparator (§17.15.1.56) element. Arguments to functions can be constants, formulas, or bookmark names that refer to constants or formulas. The functions AVERAGE, COUNT, MAX, MIN, PRODUCT, and SUM can also accept references to table cells as arguments. In the context of a table cell, functions taking a *list* also accept a single argument that designates a named-list of contiguous cells (§17.16.3.5). Function names are not case-sensitive, and white space can occur between a function's name and its argument list, if any.

|  |  |
| --- | --- |
| Function | Description |
| ABS(*x*) | Returns the absolute value of *x*. |
| AND(*x*, *y*) | Returns 1 if the logical expressions *x* and *y* are both true; otherwise, it returns 0. |
| AVERAGE(*list*) | Returns the average value of the items in *list*. |
| COUNT(*list*) | Returns the number of items in *list*. |
| DEFINED(*x*) | Returns 1 if the expression *x* is well formed; otherwise, it returns 0. |
| FALSE | Returns 0. |
| INT(*x*) | Returns the value of the integer part of *x*. |
| MAX(*list*) | Returns the largest value in *list*. |
| MIN(*list*) | Returns the smallest value in *list*. |
| MOD(*x*, *y*) | Returns the value , for some integer *n* such that, if *y* is nonzero, the result has the same sign as *x* and magnitude less than the |
| NOT(*x*) | Returns 0 if the logical expression *x* is true, or 1 if the expression is false. |
| OR(*x*, *y*) | Returns 1 if either or both logical expressions *x* and *y* are true; otherwise, it returns 0. |
| PRODUCT(*list*) | Returns the result of multiplying together all members in *list*. |
| ROUND(*x*, *y*) | Returns the value of *x* rounded to the specified number of decimal places indicated by floor(*y*), where floor has the mathematical meaning. If *y* is negative, any fractional part is discarded and the integer part of the value is rounded to the corresponding power of 10. |
| SIGN(*x*) | Returns 1 if *x* is positive; returns 0 if *x* is zero; and returns –1 if *x* is negative. |
| SUM(*list*) | Returns the sum of the items in *list*. |
| TRUE | Returns 1. |

#### Table cell references

Items in a WordprocessingML table are organized into rows and columns with the box formed by the intersection of a row and column being called a *cell*. Cells have names such as A1, A2, B1, B2, and so on, with the letter representing a column and the number representing a row. The cell at the top-left corner of each table is named A1. Column letters are not case-sensitive.

### Field formatting

The result of a field has a *format*, either by default or because that field contains a *formatting-switch*. There are three kinds of field formatting: date and time (§17.16.4.1), numeric (§17.16.4.2), and general (§17.16.4.3).

#### Date and time formatting

date-and-time-formatting-switch=

|  |  |
| --- | --- |
| Picture Item | Description |
| aaa | Formats the day of the week or month in an abbreviated form according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions: |
| A | Formats the day of the month as a number without a leading zero for single-digit days in Japanese numerals. |
| bb | Formats the year as a 2-digit number according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions: |
| bbbb | Formats the year as a 4-digit number according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions: |
| BB | Formats the year as a 2-digit number. |
| BBBB | Formats the year as a 4-digit number. |
| d | Formats the day of the week or day of the month as a number without a leading zero for single-digit days. |
| dd | Formats the day of the week or day of the month as a number with a leading zero0 for single-digit days. |
| ddd | Formats the day of the week or month in its abbreviated form according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions. |
| dddd | Formats the day of the week as its full name according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions. |
| D | Formats the day of the week or day of the month as a number without a leading zero for single-digit days. |
| DD | Formats the day of the month as a two-digit number (with a leading zero for single-digit days). |
| DDD | Formats the day of the week in an abbreviated form according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions. |
| DDDD | Formats the day of the week as its full name according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions. |
| e | Formats the Japanese Emperor Era with no leading zero for single-digit years. |
| ee | Formats the Japanese Emperor Era with a leading zero for single-digit years. |
| E | Formats the era according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions: |
| EE | Formats the Gregorian year [ISO 8601] as a four-digit number, according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions. |
| g | Formats the era according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions: |
| gg | Formats the era according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions: |
| ggg | Formats the era according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions: |
| G | Formats the era according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions. |
| GG | Formats the era according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions. |
| M | Formats the month as a number without a leading zero for single-digit months. Defaults to the Gregorian calendar [ISO 8601], but also changes in the presence of the \s and \h switches, and the bb or bbbb picture item (to the Thai Buddhist Era calendar). |
| MM | Formats the month as a number with a leading zero for single-digit months. |
| MMM | Formats the month in its abbreviated form according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions. |
| MMMM | Formats the month as its full name according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions. |
| n | Formats the Japanese Emperor Era with no leading zero for single-digit years. |
| nn | Formats the Japanese Emperor Era with leading zero for single-digit years. |
| O | Formats the month as a number without a leading zero for single-digit months in Japanese numerals. |
| w | Formats the day of the week in an abbreviated form according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions: |
| W | Formats the day of the week in an abbreviated form according to the language specified by the lang element (§17.3.2.20) on the run containing the field instructions: |
| y | Formats the year as a 2-digit number. |
| yy | Formats the year as a 2-digit number. |
| yyyy | Formats the year as a 4-digit number. |
| Y | Formats the year as a 2-digit number. |
| YY | Formats the year as a 2-digit number. |
| YYYY | Formats the year as a 4-digit number. |
| ว | Formats the day of the month as a number without a leading zero for single-digit days in Thai numerals. |
| วว | Formats the day of the month as a two-digit number (with a leading zero for single-digit days) in Thai numerals. |
| ววว | Formats the Thai Buddhist Era day of the week in its abbreviated form in Thai. |
| วววว | Formats the Thai Buddhist Era day of the week as its full name in Thai. |
| ด | Formats the Thai Buddhist Era month as a number without a leading zero for single-digit months in Thai numerals. |
| ดด | Formats the Thai Buddhist Era month as a two-digit number (with a leading zero for single-digit months) in Thai numerals. |
| ดดด | Formats the Thai Buddhist Era month in its abbreviated form. |
| ดดดด | Formats the Thai Buddhist Era month as its full name. |
| ปป | Formats the Gregorian year as a 2-digit number using Thai numerals. |
| ปปปป | Formats the Gregorian year [ISO 8601] as a 4-digit number using Thai numerals. |
| Other character | Includes the specified character in the result at that position. [*Note*: Commonly used characters are colon (:), hyphen (-), asterisk (\*), slash (/), and space. *end note*] |
| 'text' | Includes *text* in the result. |
| `numbered-item` | Includes, in Arabic numerals, the number of the preceding item numbered as a caption or resulting from a SEQ field (§17.16.5.56). *numbered-item* shall be the same name as *identifier* in that SEQ field. |

#### Numeric formatting

numeric-formatting-switch= \# switch-argument ;

|  |  |
| --- | --- |
| Picture Item | Description |
| 0 | Specifies the requisite numeric positions to display in the result. If the result does not include a digit in that position, 0 is displayed. [*Example*: In a US-English context, =4+5 \# 00.00 displays "09.00". *end example*] |
| # | Specifies the requisite numeric positions to display in the result. If the result does not include a digit in that position, a space is displayed. Extra fractional digits are rounded off. [*Example*: =9+6 \# $### displays "$ 15". *end example*] |
| x | Drops digits to the left of the x placeholder. If the placeholder is to the right of the decimal point, the result is rounded to that place. [*Example*: In a US-English context, =111053+111439 \# x## displays "492", =1/8 \# 0.00x displays |
| . | Indicates the radix-point position. [*Example*: In a US-English context, =95.4 \# $###.00 displays "$ 95.40. *end example*] The radix-point character displayed is locale-specific. |
| , | Separates groups of three digits. [*Example*: In a US-English context, |
| - | Prepends a minus sign to a negative result or prepends a space if the result is positive or 0. [*Example*: =80-90 \# -## displays "-10", while =90-80 \# ## displays " 80". *end example*] |
| + | Prepends a plus sign to a positive result, a minus sign to a negative result, or a space if the result is 0. [*Example*: =90-80 \# +## displays "+10", and =8090 \# +## displays "-10". *end example*] |
| Other character | Includes the specified character in the result at that position. [*Example*: =33 \# ##% displays "33%". *end example*] |
| 'text' | Includes text in the result. [*Example*: In a US-English context, if Price is a |
| `numbered-item` | Includes, in Arabic numerals, the number of the preceding item numbered as a caption or resulting from a SEQ field (§17.16.5.56). *numbered-item* shall be the same name as *identifier* in that SEQ field. [*Example*: |
| positive-result ; negative-result | Specifies different sets of picture items for positive and negative results. A zero value uses the positive picture. [*Example*: =Sales95 \# $#,##0.00;$#,##0.00 displays that bookmark's positive values using $#,##0.00, and it's negative values using -$#,##0.00. *end example*] |
| positive-result ; negative-result ;  zero-result | Specifies different sets of picture items for positive, negative, and zero results. |

#### General formatting

general-formatting-switch=

##### General formatting - Numeric Values

The following *switch-argument*s apply to fields whose field result is a numeric value. If the result type of the field is not numeric, then these switches have no effect. If the field result varies based on the language of the field instructions, those variations are noted inline:

|  |  |
| --- | --- |
| Switch Argument | Description |
| AIUEO | Formats a numeric result using hiragana characters in the traditional a-i-u-e-o order. [*Example*: 1 \\* AIUEO results in ア. *end example*] |
| ALPHABETIC | Formats a numeric result as one or more occurrences of an uppercase alphabetic Latin character. Value 1 results in the letter A, value 2 results in the letter B, and so on up to value 26, which results in the letter Z. For values greater than 26, 26 is repeatedly subtracted from the value until the result is 26 or less. The result value determines which letter to use, and the same letter is repeated for each time 26 was subtracted from the original value. [*Example*: |
| alphabetic | Formats a numeric result as one or more occurrences of a lowercase alphabetic Latin character. Value 1 results in the letter a, value 2 results in the letter b, and so on up to value 26, which results in the letter z. For values greater than 26, 26 is repeatedly subtracted from the value until the result is 26 or less. The result value determines which letter to use, and the same letter is repeated for each time 26 was subtracted from the original value. [*Example*: |
| Arabic | Formats a numeric result using Arabic cardinal numerals. [*Example*: For page 123, PAGE \\* Arabic results in "123". *end example*] |
| ARABICABJAD | Formats a numeric result using ascending Abjad numerals. [*Example*: |
| ARABICALPHA | Formats a numeric result using characters in the Arabic alphabet. [*Example*: |
| ArabicDash | Formats a numeric result using Arabic cardinal numerals, with a prefix of "- " and a suffix of " -". [*Example*: For page 123, PAGE \\* ArabicDash results in "- 123 -". *end example*] |
| BAHTTEXT | Formats a numeric result in the following form: |
|  | with บาทถว้ น appended to the result. |
| CardText | Formats a numeric result as lowercase cardinal text. [*Example*: For page 123, |
| CHINESENUM1 | Formats a numeric result using ascending numbers from the appropriate counting system. [*Example*: 10 \\* CHINESENUM1 results in 十. *end example*] Corresponds to an ST\_NumberFormat enumeration value of chineseCounting (zh-CN) or taiwaneseCounting (zn-TW). |
| CHINESENUM2 | Formats a numeric result using sequential numbers from the appropriate legal format. [*Example*: 123 \\* CHINESENUM2 results in 壹佰貳拾參. *end example*] Corresponds to an ST\_NumberFormat enumeration value of chineseLegalSimplified (zh-CN) or ideographLegalTraditional (zh-TW). |
| CHINESENUM3 | Formats a numeric result using sequential numbers from the appropriate counting thousand system. [*Example*: 10 \\* CHINESENUM3 results in 一百二十三. *end example*] |
| CHOSUNG | Formats a numeric result using sequential numbers from the Korean Chosung format. [*Example*: 1 \\* CHOSUNG results in ㄱ. *end example*] |
| CIRCLENUM | Formats a numeric result using decimal numbering enclosed in a circle, using the enclosed alphanumeric glyph character for numbers in the range 1–20. For nonnegative numbers outside this range, formats them as with ARABIC. [*Example*: |
| DBCHAR | Formats a numeric result using double-byte Arabic numbering. [*Example*: |
| DBNUM1 | Formats a numeric result using sequential digital ideographs, using the |
| DBNUM2 | Formats a numeric result using sequential numbers from the appropriate counting system. [*Example*: 12 \\* DBNUM2 results in 十二. *end example*] |
| DBNUM3 | Formats a numeric result using sequential numbers from the appropriate legal counting system. [*Example*: 12 \\* DBNUM3 results in 壱拾弐. *end example*] Corresponds to an ST\_NumberFormat enumeration value of japaneseLegal (ja-JP) or koreanLegal (ko-KR). |
| DBNUM4 | Formats a numeric result using sequential numbers from the appropriate digital counting system. [*Example*: 12 \\* DBNUM4 results in 一二. *end example*] Corresponds to an ST\_NumberFormat enumeration value of japaneseDigitalTenThousand (ja-JP) or koreanDigital2 (ko-KR) or taiwaneseDigital (zh-TW). |
| DollarText | Formats a numeric result in the following form: |
| GANADA | Formats a numeric result using sequential numbers from the Korean Ganada format. [*Example*: 12 \\* GANADA results in 타. *end example*] |
| GB1 | Formats a numeric result using decimal numbering followed by a period, using the enclosed alphanumeric glyph character. [*Example*: 12 \\* GB1 results in ⒓. *end example*] |
| GB2 | Formats a numeric result using decimal numbering enclosed in parenthesis, using the enclosed alphanumeric glyph character. [*Example*: 12 \\* GB2 results in ⑿. *end example*] |
| GB3 | Formats a numeric result using decimal numbering enclosed in a circle, using the enclosed alphanumeric glyph character. Once the specified sequence reaches 11, the numbers can be replaced with non-enclosed equivalents. [*Example*: |
| GB4 | Formats a numeric result using decimal numbering enclosed in a circle, using the enclosed alphanumeric glyph character. Once the specified sequence reaches 11, the numbers can be replaced with non-enclosed equivalents. [*Example*: |
| HEBREW1 | Formats a numeric result using Hebrew numerals. [*Example*: 123 \\* HEBREW1 results in קכג. *end example*] |
| HEBREW2 | Formats a numeric result using the Hebrew alphabet. [*Example*: |
| Hex | Formats the numeric result using uppercase hexadecimal digits. [*Example*: For |
| HINDIARABIC | Formats a numeric result using Hindi numbers. [*Example*: |
| HINDICARDTEXT | Formats a numeric result using sequential numbers from the Hindi counting system. [*Example*: 123 \\* HINDICARDTEXT results in एक सौ तईे स. *end example*] |
| HINDILETTER1 | Formats a numeric result using Hindi vowels. [*Example*: |
| HINDILETTER2 | Formats a numeric result using Hindi consonants. [*Example*: |
| IROHA | Formats a numeric result using the Japanese iroha. [*Example*: 12 \\* IROHA results in オ. *end example*] |
| KANJINUM1 | Formats a numeric result using a Japanese style using the appropriate counting system. [*Example*: 12 \\* KANJINUM1 results in 一二. *end example*] |
| KANJINUM2 | Formats a numeric result using the appropriate counting system. [*Example*: 12 \\* KANJINUM2 results in 十二. *end example*] |
| KANJINUM3 | Formats a numeric result using the appropriate counting system. [*Example*: |
| Ordinal | Formats a numeric result using lowercase ordinal Arabic numerals. [*Example*: |
| OrdText | Formats a numeric result as lowercase ordinal text. Apart from being used to round off the whole number part, the fractional part is not used. [*Example*: |
| Roman | Formats a numeric result using uppercase Roman numerals. [*Example*: For page 123, PAGE \\* Roman results in "CXXIII". *end example*] |
| roman | Formats a numeric result using lowercase Roman numerals. [*Example*: For page 123, PAGE \\* roman results in "cxxiii". *end example*] |
| SBCHAR | Formats a numeric result using single-byte Arabic numbering. [*Example*: |
| THAIARABIC | Formats a numeric result using Thai numbers. [*Example*: 123 \\* THAIARABIC results in ๑๒๓. *end example*] |
| THAICARDTEXT | Formats a numeric result using sequential numbers from the Thai counting system. [*Example*: 123 \\* THAICARDTEXT results in หน่งึ รอ้ ยยส่ี บิ สาม. *end example*] Corresponds to an ST\_NumberFormat enumeration value of thaiCounting. |
| THAILETTER | Formats a numeric result using Thai letters. [*Example*: 30 \\* THAILETTER results in ฮฮฮม. *end example*] |
| VIETCARDTEXT | Formats a numeric result using Vietnamese numerals. [*Example*: |
| ZODIAC1 | Formats a numeric result using sequential numerical traditional ideographs. |
| ZODIAC2 | Formats a numeric result using sequential zodiac ideographs. [*Example*: 1 \\* ZODIAC2 results in 子. *end example*] |
| ZODIAC3 | Formats a numeric result using sequential traditional zodiac ideographs. |

##### General formatting - String Values

The following *switch-argument*s apply to fields whose field result is a string value:

|  |  |
| --- | --- |
| General Formatting Switch Arguments | Switch Argument Description |
| Caps | Capitalizes the first letter of each word. [*Example*: USERNAME "mary smith" \\* Caps results in "Mary Smith", whereasUSERNAME "marysmith" \\* Caps results in "Marysmith". *end example*] |
| FirstCap | Capitalizes the first letter of the first word. [*Example*: USERNAME |
| Lower | All letters are lowercase. [*Example*: USERNAME "Mary Smith" \\* Lower results in "mary smith". *end example*] |
| Upper | All letters are uppercase. [*Example*: USERNAME "Mary Smith" \\* Upper results in "MARY SMITH". *end example*] |

##### General formatting - Field Result Formatting

The following *switch-argument*s apply to any field result and provide directions to applications regarding the formatting which should be applied to a field result after a field update has been performed. As discussed in §17.16, as to when a field update is performed is outside the scope of ECMA-376.

### Field definitions

Each of the subclauses below this subclause describes a separate field, and each description contains a section marked **Syntax**. That section contains pieces of the field grammar as they pertain to that specific field. These pieces are presented in a slightly simpler form to aid in the understanding of the description. In those sections, the left-square-bracket and right-square-bracket designate the start and end of an option, as used in ISO/IEC 14977. However, the field-name, the open-parenthesis and the close-parenthesis designate actual literal text, as does each comma. [*Note*: Therefore, in a strict presentation according to ISO/IEC 14977, each field-name, open parenthesis and close-parenthesis would appear with double-quotes surrounding each instance. *end note*]

|  |  |
| --- | --- |
| **Category** | **Description** |
| Date and Time | Inserts the current date and/or time, or date and/or time of some kind of event. |
| Document Automation | Provides functionality for automated document processing. |
| Document Information | Inserts or stores information about the document. |
| Equations and Formulas | Defines formulas and calculates results; inserts symbols. |
| Form Fields | Defines fields that support insertion of data through form controls. |
| Index and Tables | Defines entries for, and builds, a table of contents, table of figures, or table of authorities. |
| Links and References | Inserts information from another place in the same document or from a different document or file. |
| Mail Merge | Defines information that is to be used in a mail merge. A *mail merge* is a process by which a data set (e.g., of names and addresses) is combined with a WordprocessingML document to produce a customized document for each record in said data set. In other words, a *mail merge* is an operation by which an application replaces certain fields with the data in each record from a corresponding data source (see §17.14 for additional information). |
| Numbering | Specifies numbering for document items such as sections and pages; also bar codes. |
| User Information | References the name, initials, or address of a user account under which the document is manipulated. [*Note*: These fields can be used in documents to allow applications to perform implementation-defined updates under a particular user’s context (if such a context exists); for example, to add the address of the current user to a generic form letter. *end note*] |

### calcOnExit (Recalculate Fields When Current Field Is Modified)

This element specifies that the current contents of all fields within the current WordprocessingML document shall be recalculated from their field codes when the contents of the parent form field are modified. [*Note*: It is at the discretion of an application to determine the scope of a single modification, for example, when the user moves the insertion point in a user interface, or after each keystroke, etc. *end note*]

### checkBox (Checkbox Form Field Properties)

This element specifies a set of properties which shall be associated with the parent FORMCHECKBOX checkbox form field (§17.16.5.20) within the document.

### checked (Checkbox Form Field State)

This element specifies the current state for a checkbox form field. This value shall be used to specify the current value for a checkbox as explicitly chosen for that checkbox, as opposed its default value, which is specified using the default element (§17.16.12).

### ddList (Drop-Down List Form Field Properties)

This element specifies a set of properties which shall be associated with the parent FORMDROPDOWN drop-down list form field (§17.16.5.21) within the document.

### default (Default Text Box Form Field String)

This element specifies the default string for the parent text box form field. This string is the content which shall be displayed in the document story within this form field if its current run contents are empty (i.e. there is not actual content within the text box). If the type (§17.16.34) of the current form field is calculation, then this string shall hold the calculation to be performed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### default (Default Drop-Down List Item Index)

This element specifies the zero-based index of the default entry for the parent drop-down list form field. This index value is the value within the drop-down list which shall be displayed in the document story within this form field if no element is selected (i.e. the result element (§17.16.28) is omitted).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### default (Default Checkbox Form Field State)

This element specifies the default checkbox state for the parent checkbox form field. This value determines the checkbox state when its current run contents are empty (i.e. there is not actual content within the drop-down list).

### delInstrText (Deleted Field Code)

This element specifies that this run contains deleted field codes (§17.16.5) within a complex field in the document. The delInstrText element shall be used for all runs containing field codes which are part of a region of text that is contained in a deleted region using the del element (§17.13.5.14).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| xml:space (Content Contains Significant Whitespace) | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. |

### enabled (Form Field Enabled)

This element specifies whether the parent form field shall behave as though it is enabled or disabled when it is displayed in the document. This setting shall have no effect on the behavior of this form field unless the document's Settings part specifies that the documentProtection element for the current document is in a state allowing the filling in of form fields.

### entryMacro (Script Function to Execute on Form Field Entry)

This element specifies a subroutine in a scripting language which should be executed when the when the run contents of the parent form field are entered. The language and location of this subroutine can be determined using any method desired by an application. [*Note*: It is at the discretion of an application to determine the scope and timing of "entering" a form field, for example, when the user moves the insertion point in a user interface or upon each operation by an application without a user interface, etc. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Name of Script Function) | Specifies the name of a single scripting subroutine which shall be associated with the parent element. Its use is specifies based on the context of the parent XML element. |

### exitMacro (Script Function to Execute on Form Field Exit)

This element specifies a subroutine in a scripting language which should be executed when the when the run contents of the parent form field are exited. The language and location of this subroutine can be determined using any method desired by an application. [*Note*: It is at the discretion of an application to determine the scope and timing of "exiting" a form field, for example, when the user moves the insertion point in a user interface or upon each operation by an application without a user interface, etc. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Name of Script Function) | Specifies the name of a single scripting subroutine which shall be associated with the parent element. Its use is specifies based on the context of the parent XML element. |

### ffData (Form Field Properties)

This element specifies a set of properties which shall be associated with the parent form field within the document. This form field can be of any of the following types (with the associated field codes in parentheses):

### fldChar (Complex Field Character)

This element specifies the presence of a complex field character at the current location in the parent run. A *complex field character* is a special character which delimits the start and end of a complex field or separates its field codes from its current field result.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dirty (Field Result Invalidated) | Specifies that this field has been flagged by an application to indicate that its current results are no longer correct (stale) due to other modifications made to the document, and these contents should be updated before they are displayed if this functionality is supported by the next processing application. |
| fldCharType (Field Character Type) | Specifies the type of the current complex field character in the document. |
| fldLock (Field Should Not Be Recalculated) | Specifies that the parent complex field shall not have its field result recalculated, even if an application attempts to recalculate the results of all fields in the document or a recalculation is explicitly requested. |

### fldSimple (Simple Field)

This element specifies the presence of a simple field at the current location in the document. The semantics of this field are defined via its field codes (§17.16.5).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dirty (Field Result Invalidated) | Specifies that this field has been flagged by an application to indicate that its current results are no longer correct (stale) due to other modifications made to the document, and these contents should be updated before they are displayed if this functionality is supported by the next processing application. |
| fldLock (Field Should Not Be Recalculated) | Specifies that the parent field shall not have its field result recalculated, even if an application attempts to recalculate the results of all fields in the document or a recalculation is explicitly requested. |
| instr (Field Codes) | Specifies the field codes for the simple field. The possible field codes are defined in §17.16.5. |

### format (Text Box Form Field Formatting)

This element specifies the field formatting which shall be applied to the contents of the parent form field whenever those contents are modified. The type of formatting which is applied to the field depends on the value of its type element (§17.16.34), as follows:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### helpText (Associated Help Text)

This element specifies optional help text which shall be associated with the parent form field. The method or user interface by which this help text can be surfaced is not defined by ECMA-376.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| type (Help Text Type) | Specifies the type of help text which is specified by this element, defined by the simple type below. |
| val (Help Text Value) | Specifies the help text for the current form field. Based on the value of the type attribute, the contents of this field shall be interpreted as follows: |

### hyperlink (Hyperlink)

This element specifies the presence of a hyperlink at the current location in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| anchor (Hyperlink Anchor) | Specifies the name of a bookmark in the current document which shall be the target of this hyperlink. |
| docLocation (Location in Target Document) | Specifies a location in the target of the hyperlink that has no bookmarks. The method by which the contents of this attribute are linked to document text is outside the scope of ECMA-376. |
| history (Add To Viewed Hyperlinks) | Specifies whether the target of the parent hyperlink (as specified via the r:id attribute) shall be added to a list of viewed hyperlinks when it is invoked. |
| id (Hyperlink Target) | Specifies the ID of the relationship whose target shall be used as the target for this hyperlink. |
| tgtFrame (Hyperlink Target Frame) | Specifies a frame within the parent HTML frameset for the target of the parent hyperlink when one exists. All values specified by this element shall be handled as follows: |
| tooltip (Associated String) | Specifies a string which can be surfaced in a user interface as associated with the parent hyperlink. The method by which this string is surfaced by an application is outside the scope of ECMA-376. |

### instrText (Field Code)

This element specifies that this run contains field codes (§17.16.5) within a complex field in the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| xml:space (Content Contains Significant Whitespace) | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. |

### label (Form Field Label)

This element specifies the label identifier associated with the current form field. The identifier representing the label shall be stored on this element’s val attribute and is used to reference the unique identifier value of a structured document tag. The contents of the structured document tag resolved by a specific unique identifier shall be used as the label content for the form field that references that specific unique identifier of the structured document tag. If multiple instances of the label element are present, the labels referenced are ordered from most general to most specific. [*Example*: A form element for specifying country name might reference the label for these three items (in order): “Sender”, “Home Address”, and “Country”. *end example*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### listEntry (Drop-Down List Entry)

This element specifies the presence of a single drop-down list entry within the parent drop-down list form field in the document. The order of appearance of the series of listEntry elements in the WordprocessingML markup shall dictate the order of the entries in the drop-down list when it is displayed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (String Value) | Specifies that its contents contain a string. |

### maxLength (Text Box Form Field Maximum Length)

This element specifies the maximum length of text which should be allowed within the parent text box form field before any formatting specified by the format element (§17.16.20). If the current contents of this field exceed the specified value when the document is loaded, that violation shall not result in an error, but the application shall prevent the addition of any additional characters until the contents are brought below that limit.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the contents of this attribute contains a decimal number. |

### name (Form Field Name)

This element specifies the name of the current form field.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Form Field Name Value) | Specifies the name of the form field. |

### result (Drop-Down List Selection)

This element specifies the zero-based index of the currently selected entry for the parent drop-down list form field.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Decimal Number Value) | Specifies that the content of this attribute contains a decimal number. |

### size (Checkbox Form Field Size)

This element specifies the exact size for the parent checkbox form field. The resulting field shall be displayed in this point size regardless of the size specified by the formatting of its corresponding content in the document via the style hierarchy.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Half Point Measurement) | Specifies a positive measurement specified in half-points (1/144 of an inch). |

### sizeAuto (Automatically Size Form Field)

This element specifies that the parent checkbox form field shall be formatted using the point size which is applied to its field characters via the style hierarchy.

### statusText (Associated Status Text)

This element specifies optional status text which shall be associated with the parent form field. The method or user interface by which this status text can be surfaced is not defined by ECMA-376.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| type (Status Text Type) | Specifies the type of status text, which is specified by this element, defined by the simple type below. |
| val (Status Text Value) | Specifies the status text for the current form field. Based on the value of the type attribute, the contents of this field shall be interpreted as follows: |

### tabIndex (Form Field Navigation Order Index)

This element specifies the position of the current form field in the navigation (tab) order used in the document. The tabbing index shall be stored on this element’s val attribute and is analogous to the tabIndex attribute in HTML.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Positive Decimal Number Value) | Specifies that the contents of this attribute contains a positive decimal number. |

### textInput (Text Box Form Field Properties)

This element specifies a set of properties which shall be associated with the parent FORMTEXT text box form field (§17.16.5.22) within the document.

### type (Text Box Form Field Type)

This element specifies the type of the contents of the current text box form field. This element shall not be used to prevent the successful loading of any contents in the field but shall be used to parse the formatting specified in the format element (§17.16.20) and should be used to prevent the addition of illegal content when its contents are edited by an application.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Text Box Form Field Type Values) | Specifies the type of the text box form field, as defined by the simple type referenced below. |

## Miscellaneous Topics

This section covers topics not covered elsewhere within the WordprocessingML documentation.

### Subdocuments

Within a WordprocessingML document, it is sometimes necessary to break a large document into two or more separate WordprocessingML document files, allowing each of these files to be distributed, edited, and handled independently.

#### subDoc (Anchor for Subdocument Location)

This element specifies a location within a master document for the insertion of the contents of a specified subdocument. The specified subdocument's contents should appear at the specified location within the master document as needed but shall remain part of the separate file specified by the subdocument location. The location of the subdocument shall be specified by the relationship whose Id attribute matches the id attribute on this element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| id (Relationship to Part) | Specifies the relationship ID to a specified part. |

### Alternative Format Import

When generating WordprocessingML documents, it is sometimes necessary to include existing document content (henceforth called *external content*) within the document. External content in a document is typically included because it was stored in a format other than the WordprocessingML format defined by ECMA-376.

#### altChunk (Anchor for Imported External Content)

This element specifies a location within a document for the insertion of the contents of a specified file containing external content to be imported into the main WordprocessingML document. The specified file's contents should appear at the specified location within the document and can henceforth be emitted as regular WordprocessingML without distinction to its origin. The location of the external content to be imported shall be specified by the relationship whose Id attribute matches the id attribute on this element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| id (Relationship to Part) | Specifies the relationship ID to a specified part containing alternate content for import. |

#### altChunkPr (External Content Import Properties)

This element specifies the set of properties which shall be applied to the import of the external content specified by the parent altChunk element. Within ECMA-376, only one property is specified.

#### matchSrc (Keep Source Formatting on Import)

This element specifies if any style definitions present in the imported content shall be overridden by identical styles present in the host WordprocessingML document. If this element's val attribute is true, then any style exists in both the imported content and main document shall be maintained on the imported content by redefining the style name and/or ID as needed. Conversely, if this element's val attribute is false, any style which exists in both the imported content and main document shall apply the style form the main document in place of the style in the imported content.

### Roundtripping Alternate Content

WordprocessingML does not define a set of locations where applications should, whenever possible, attempt to store and roundtrip all non-taken choices in alternate content blocks. This behavior is therefore application-defined. For further discussion of alternate content blocks see §L.1.18.4.

### Boolean Property (CT\_OnOff)

This common complex type specifies a boolean attribute used throughout WordprocessingML.

|  |  |
| --- | --- |
| **Attributes** | **Description** |

|  |  |
| --- | --- |
| val (On/Off Value) | Specifies a binary value for the property defined by the parent XML element. |

## Simple Types

This is the complete list of simple types dedicated to WordprocessingML.

### ST\_AnnotationVMerge (Table Cell Vertical Merge Revision Type)

This simple type specifies the possible values for the vertical merge setting which applied to a table cell by a cell merge (or split) revision.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| cont (Vertically Merged Cell) | Specifies that the revision resulted in this cell being vertically merged with the cell above it. |
| rest (Vertically Split Cell) | Specifies that the revision resulted in this cell being vertically split from the one above it. |

### ST\_Border (Border Styles)

This simple type specifies the kinds of borders which can be specified for WordprocessingML objects which have a border.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| apples (Apples Art Border) | Specifies an art border using the following images: |
| archedScallops (Arched Scallops Art Border) | Specifies an art border using the following images: |
| babyPacifier (Baby Pacifier Art Border) | Specifies an art border using the following images: |
| babyRattle (Baby Rattle Art Border) | Specifies an art border using the following images: |
| balloons3Colors (Three Color Balloons Art Border) | Specifies an art border using the following images: |
| balloonsHotAir (Hot Air Balloons Art Border) | Specifies an art border using the following images: |
| basicBlackDashes (Black Dash Art Border) | Specifies an art border using the following images: |
| basicBlackDots (Black Dot Art Border) | Specifies an art border using the following images: |
| basicThinLines (Thin Line Art Border) | Specifies an art border using the following images: |
| basicWhiteDashes (White Dash Art Border) | Specifies an art border using the following images: |
| BasicWhiteDots (White Dot Art Border) | Specifies an art border using the following images: |
| basicWideInline (Wide Inline Art Border) | Specifies an art border using the following images: |
| basicWhiteSquares (White Square Art Border) | Specifies an art border using the following images: |
| basicWideInline (Wide Inline Art Border) | Specifies an art border using the following images: |
| basicWideMidline (Wide Midline Art Border) | Specifies an art border using the following images: |
| basicWideOutline (Wide Outline Art Border) | Specifies an art border using the following images: |
| bats (Bats Art Border) | Specifies an art border using the following images: |
| birds (Birds Art Border) | Specifies an art border using the following images: |
| birdsFlight (Birds Flying Art Border) | Specifies an art border using the following images: |
| cabins (Cabin Art Border) | Specifies an art border using the following images: |
| cakeSlice (Cake Art Border) | Specifies an art border using the following images: |
| certificateBanner (Certificate Banner Art Border) | Specifies an art border using the following images: |
| chainLink (Chain Link Art Border) | Specifies an art border using the following images: |
| champagneBottle (Champagne Bottle Art Border) | Specifies an art border using the following images: |
| checkedBarBlack (Black and White Bar Art Border) | Specifies an art border using the following images: |
| checkedBarColor (Color Checked Bar Art Border) | Specifies an art border using the following images: |
| checkered (Checkerboard Art Border) | Specifies an art border using the following images: |
| christmasTree (Christmas Tree Art Border) | Specifies an art border using the following images: |
| circlesLines (Circles And Lines Art Border) | Specifies an art border using the following images: |
| circlesRectangles (Circles and Rectangles Art Border) | Specifies an art border using the following images: |
| classicalWave (Wave Art Border) | Specifies an art border using the following images: |
| clocks (Clocks Art Border) | Specifies an art border using the following images: |
| compass (Compass Art Border) | Specifies an art border using the following images: |
| confetti (Confetti Art Border) | Specifies an art border using the following images: |
| confettiGrays (Confetti Art Border) | Specifies an art border using the following images: |
| confettiOutline (Confetti Art Border) | Specifies an art border using the following images: |
| confettiStreamers (Confetti Streamers Art Border) | Specifies an art border using the following images: |
| confettiWhite (Confetti Art Border) | Specifies an art border using the following images: |
| cornerTriangles (Corner Triangle Art Border) | Specifies an art border using the following images: |
| couponCutoutDashes (Dashed Line Art Border) | Specifies an art border using the following images: |
| couponCutoutDots (Dotted Line Art Border) | Specifies an art border using the following images: |
| crazyMaze (Maze Art Border) | Specifies an art border using the following images: |
| creaturesButterfly (Butterfly Art Border) | Specifies an art border using the following images: |
| creaturesFish (Fish Art Border) | Specifies an art border using the following images: |
| creaturesInsects (Insects Art Border) | Specifies an art border using the following images: |
| creaturesLadyBug (Ladybug Art Border) | Specifies an art border using the following images: |
| crossStitch (Cross-stitch Art Border) | Specifies an art border using the following images: |
| cup (Cupid Art Border) | Specifies an art border using the following images: |
| custom (Custom Defined Art Border) | Specifies a custom art border using the parent element's attributes to reference one or more customer art border images. |
| dashDotStroked (Dash Dot Strokes Line Border) | Specifies a line border consisting of a line with a series of alternating thin and thick strokes around the parent object. |
| dashed (Dashed Line Border) | Specifies a line border consisting of a dashed line around the parent object. |
| dashSmallGap (Dashed Line Border) | Specifies a line border consisting of a dashed line with small gaps around the parent object. |
| decoArch (Archway Art Border) | Specifies an art border using the following images: |
| decoArchColor (Color Archway Art Border) | Specifies an art border using the following images: |
| decoBlocks (Blocks Art Border) | Specifies an art border using the following images: |
| diamondsGray (Gray Diamond Art Border) | Specifies an art border using the following images: |
| dotDash (Dot Dash Line Border) | Specifies a line border consisting of a alternating dotted and dashed line around the parent object. |
| dotDotDash (Dot Dot Dash Line Border) | Specifies a line border consisting of a alternating dotted, dotted, dashed line around the parent object. |
| dotted (Dotted Line Border) | Specifies a line border consisting of a dotted line around the parent object. |
| double (Double Line Border) | Specifies a line border consisting of a double line |
| doubleD (Double D Art Border) | Specifies an art border using the following images: |
| doubleDiamonds (Diamond Art Border) | Specifies an art border using the following images: |
| doubleWave (Double Wave Line Border) | Specifies a line border consisting of a double wavy line around the parent object. |
| earth1 (Earth Art Border) | Specifies an art border using the following images: |
| earth2 (Earth Art Border) | Specifies an art border using the following images: |
| earth3 (Earth Art Border) | Specifies an art border using the following images: |
| eclipsingSquares1 (Shadowed Square Art Border) | Specifies an art border using the following images: |
| eclipsingSquares2 (Shadowed Square Art Border) | Specifies an art border using the following images: |
| eggsBlack (Painted Egg Art Border) | Specifies an art border using the following images: |
| fans (Fans Art Border) | Specifies an art border using the following images: |
| film (Film Reel Art Border) | Specifies an art border using the following images: |
| firecrackers (Firecracker Art Border) | Specifies an art border using the following images: |
| flowersBlockPrint (Flowers Art Border) | Specifies an art border using the following images: |
| flowersDaisies (Daisy Art Border) | Specifies an art border using the following images: |
| flowersModern1 (Flowers Art Border) | Specifies an art border using the following images: |
| flowersModern2 (Flowers Art Border) | Specifies an art border using the following images: |
| flowersPansy (Pansy Art Border) | Specifies an art border using the following images: |
| flowersRedRose (Red Rose Art Border) | Specifies an art border using the following images: |
| flowersRoses (Roses Art Border) | Specifies an art border using the following images: |
| flowersTeacup (Flowers in a Teacup Art Border) | Specifies an art border using the following images: |
| flowersTiny (Small Flower Art Border) | Specifies an art border using the following images: |
| gems (Gems Art Border) | Specifies an art border using the following images: |
| gingerbreadMan (Gingerbread Man Art Border) | Specifies an art border using the following images: |
| gradient (Triangle Gradient Art Border) | Specifies an art border using the following images: |
| handmade1 (Handmade Art Border) | Specifies an art border using the following images: |
| handmade2 (Handmade Art Border) | Specifies an art border using the following images: |
| heartBalloon (Heart-Shaped Balloon Art Border) | Specifies an art border using the following images: |
| heartGray (Gray Heart Art Border) | Specifies an art border using the following images: |
| hearts (Hearts Art Border) | Specifies an art border using the following images: |
| heebieJeebies (Pattern Art Border) | Specifies an art border using the following images: |
| holly (Holly Art Border) | Specifies an art border using the following images: |
| houseFunky (House Art Border) | Specifies an art border using the following images: |
| hypnotic (Circular Art Border) | Specifies an art border using the following images: |
| iceCreamCones (Ice Cream Cone Art Border) | Specifies an art border using the following images: |
| inset (Inset Line Border) | Specifies a line border consisting of an inset set of lines around the parent object. |
| lightBulb (Light Bulb Art Border) | Specifies an art border using the following images: |
| lightning1 (Lightning Art Border) | Specifies an art border using the following images: |
| lightning2 (Lightning Art Border) | Specifies an art border using the following images: |
| mapleLeaf (Maple Leaf Art Border) | Specifies an art border using the following images: |
| mapleMuffins (Muffin Art Border) | Specifies an art border using the following images: |
| mapPins (Map Pins Art Border) | Specifies an art border using the following images: |
| marquee (Marquee Art Border) | Specifies an art border using the following images: |
| marqueeToothed (Marquee Art Border) | Specifies an art border using the following images: |
| moons (Moon Art Border) | Specifies an art border using the following images: |
| mosaic (Mosaic Art Border) | Specifies an art border using the following images: |
| musicNotes (Musical Note Art Border) | Specifies an art border using the following images: |
| nil (No Border) | Specifies that no border shall be applied to the current item. |
| none (No Border) | Specifies that no border shall be applied to the current item. |
| northwest (Patterned Art Border) | Specifies an art border using the following images: |
| outset (Outset Line Border) | Specifies a line border consisting of an outset set of lines around the parent object. |
| ovals (Oval Art Border) | Specifies an art border using the following images: |
| packages (Package Art Border) | Specifies an art border using the following images: |
| palmsBlack (Black Palm Tree Art Border) | Specifies an art border using the following images: |
| palmsColor (Color Palm Tree Art Border) | Specifies an art border using the following images: |
| paperClips (Paper Clip Art Border) | Specifies an art border using the following images: |
| papyrus (Papyrus Art Border) | Specifies an art using the following images: |
| partyFavor (Party Favor Art Border) | Specifies an art border using the following images: |
| partyGlass (Party Glass Art Border) | Specifies an art border using the following images: |
| pencils (Pencils Art Border) | Specifies an art border using the following images: |
| people (Character Art Border) | Specifies an art border using the following images: |
| peopleHats (Character With Hat Art Border) | Specifies an art border using the following images: |
| peopleWaving (Waving Character Border) | Specifies an art border using the following images: |
| poinsettias (Poinsettia Art Border) | Specifies an art border using the following images: |
| postageStamp (Postage Stamp Art Border) | Specifies an art border using the following images: |
| pumpkin1 (Pumpkin Art Border) | Specifies an art border using the following images: |
| pushPinNote1 (Push Pin Art Border) | Specifies an art border using the following images: |
| pushPinNote2 (Push Pin Art Border) | Specifies an art border using the following images: |
| pyramids (Pyramid Art Border) | Specifies an art border using the following images: |
| pyramidsAbove (Pyramid Art Border) | Specifies an art border using the following images: |
| quadrants (Quadrants Art Border) | Specifies an art border using the following images: |
| rings (Rings Art Border) | Specifies an art border using the following images: |
| safari (Safari Art Border) | Specifies an art border using the following images: |
| sawtooth (Saw tooth Art Border) | Specifies an art border using the following images: |
| sawtoothGray (Gray Saw tooth Art Border) | Specifies an art border using the following images: |
| scaredCat (Scared Cat Art Border) | Specifies an art border using the following images: |
| seattle (Umbrella Art Border) | Specifies an art border using the following images: |
| shadowedSquares (Shadowed Squares Art Border) | Specifies an art border using the following images: |
| shapes1 (Black and White Shapes Art Border) | Specifies an art border using the following images: |
| shapes2 (Black and White Art Border Two) | Specifies an art border using the following images: |
| sharksTeeth (Shark Tooth Art Border) | Specifies an art border using the following images: |
| shorebirdTracks (Bird Tracks Art Border) | Specifies an art border using the following images: |
| single (Single Line Border) | Specifies a line border consisting of a single line around the parent object. |
| skyrocket (Rocket Art Border) | Specifies an art border using the following images: |
| snowflakeFancy (Snowflake Art Border) | Specifies an art border using the following images: |
| snowflakes (Snowflake Art Border) | Specifies an art border using the following images: |
| sombrero (Sombrero Art Border) | Specifies an art border using the following images: |
| southwest (Southwest-themed Art Border) | Specifies an art border using the following images: |
| stars (Stars Art Border) | Specifies an art border using the following images: |
| stars3d (3-D Stars Art Border) | Specifies an art border using the following images: |
| starsBlack (Stars Art Border) | Specifies an art border using the following images: |
| starsShadowed (Stars With Shadows Art Border) | Specifies an art border using the following images: |
| starsTop (Stars On Top Art Border) | Specifies an art border using the following images: |
| sun (Sun Art Border) | Specifies an art border using the following images: |
| swirligig (Whirligig Art Border) | Specifies an art border using the following images: |
| thick (Single Line Border) | Specifies a line border consisting of a single line around the parent object. |
| thickThinLargeGap (Thick, Thin Line Border) | Specifies a line border consisting of a thick line contained within a thin line with a large sized intermediate gap around the parent object. |
| thickThinMediumGap (Thick, Thin Line Border) | Specifies a line border consisting of a thick line contained within a thin line with a medium sized intermediate gap around the parent object. |
| thickThinSmallGap (Thick, Thin Line Border) | Specifies a line border consisting of a thick line contained within a thin line with a small intermediate gap around the parent object. |
| thinThickLargeGap (Thin, Thick Line Border) | Specifies a line border consisting of a thin line contained within a thick line contained within a thick thin with a large sized intermediate gap between each around the parent object. |
| thinThickMediumGap (Thin, Thick Line Border) | Specifies a line border consisting of a thin line contained within a thick line contained within a thick thin with a medium sized intermediate gap between each around the parent object. |
| thinThickSmallGap (Thin, Thick Line Border) | Specifies a line border consisting of a thin line contained within a thick line contained within a thick thin with a small intermediate gap between each around the parent object. |
| thinThickThinLargeGap (Thin, Thick, Thin Line Border) | Specifies a line border consisting of a thin line contained within a thick line, contained within a thin line with a large sized intermediate gap around the parent object. |
| thinThickThinMediumGap (Thin, Thick, Thin Line Border) | Specifies a line border consisting of a thin line contained within a thick line, contained within a thin line with a medium sized intermediate gap around the parent object. |
| thinThickThinSmallGap (Thin, Thick, Thin Line Border) | Specifies a line border consisting of a thin line contained within a thick line, contained within a thin line with a small intermediate gap around the parent object. |
| threeDEmboss (3D Embossed Line Border) | Specifies a line border consisting of three staged gradient lines around the parent object, getting darker towards the object. |
| threeDEngrave (3D Engraved Line Border) | Specifies a line border consisting of three staged gradient lines around the parent object, getting darker away from the object. |
| tornPaper (Torn Paper Art Border) | Specifies an art border using the following images: |
| tornPaperBlack (Black Torn Paper Art Border) | Specifies an art border using the following images: |
| trees (Tree Art Border) | Specifies an art border using the following images: |
| triangle1 (Triangle Art Border One) | Specifies an art border using the following images: |
| triangle2 (Triangle Art Border Two) | Specifies an art border using the following images: |
| triangleCircle1 (Triangle and Circle Art Border) | Specifies an art border using the following images: |
| triangleCircle2 (Triangle and Circle Art Border Two) | Specifies an art border using the following images: |
| triangleParty (Triangle Art Border) | Specifies an art border using the following images: |
| triangles (Triangles Art Border) | Specifies an art border using the following images: |
| triple (Triple Line Border) | Specifies a line border consisting of a triple line around the parent object. |
| twistedLines1 (Twisted Lines Art Border) | Specifies an art border using the following images: |
| twistedLines2 (Twisted Lines Art Border) | Specifies an art border using the following images: |
| vine (Vine Art Border) | Specifies an art border using the following images: |
| wave (Wavy Line Border) | Specifies a line border consisting of a wavy line around the parent object. |
| waveline (Wavy Line Art Border) | Specifies an art border using the following images: |
| weavingAngles (Weaving Angles Art Border) | Specifies an art border using the following images: |
| weavingBraid (Weaving Braid Art Border) | Specifies an art border using the following images: |
| weavingRibbon (Weaving Ribbon Art Border) | Specifies an art border using the following images: |
| weavingStrips (Weaving Strips Art Border) | Specifies an art border using the following images: |
| whiteFlowers (White Flowers Art Border) | Specifies an art border using the following images: |
| woodwork (Woodwork Art Border) | Specifies an art border using the following images: |
| xIllusions (Crisscross Art Border) | Specifies an art border using the following images: |
| zanyTriangles (Triangle Art Border) | Specifies an art border using the following images: |
| zigZag (Zigzag Art Border) | Specifies an art border using the following images: |
| zigZagStitch (Zigzag stitch) | Specifies an art border using the following images: |

### ST\_BrClear (Line Break Text Wrapping Restart Location)

This simple type specifies the set of possible restart locations which can be used as to determine the next available line when a break’s type attribute has a value of textWrapping. This property only affects the restart location when the current run is being displayed on a line which does not span the full text extents due to the presence of a floating object (see enumeration values for details).

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| all (Restart On Next Full Line) | Specifies that the text wrapping break shall advance the text to the next line in the WordprocessingML document which spans the full width of the line (i.e. the next line which is not interrupted by any floating objects when those objects are positioned on the page at display time. |
| left (Restart In Next Text Region Unblocked on the Left) | Specifies that the text wrapping break shall behave as follows when this line intersects a floating object: |
| none (Restart On Next Line) | Specifies that the text wrapping break shall advance the text to the next line in the WordprocessingML document, regardless of its position left to Right or the presence of any floating objects which intersect with the line, |
| Right (Restart In Next Text Region Unblocked on the Right) | Specifies that the text wrapping break shall behave as follows when this line intersects a floating object: |

### ST\_BrType (Break Types)

This simple type specifies the possible kinds of break characters in a WordprocessingML document. The break type determines the next location where text shall be placed after this manual break is applied to the text contents (see enumeration values for details).

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| column (Column Break) | Specifies that the current break shall restart itself on the next column available on the current page. |
| page (Page Break) | Specifies that the current break shall restart itself on the next page of the document. |
| textWrapping (Line Break) | Specifies that the current break shall restart itself on the next line in the document |

### ST\_CaptionPos (Automatic Caption Positioning Values)

This simple type specifies the possible values can be used for the position of an automatically inserted caption on an object within this document. These values specify the position a given caption shall be take relative to the object it is used to label.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| above (Position Caption Above Object) | Specifies that an automatically inserted caption shall be positioned above the object that it is used to label. |
| below (Position Caption Below Object) | Specifies that an automatically inserted caption shall be positioned below the object that it is used to label. |
| left (Position Caption Left Of Object) | Specifies that an automatically inserted caption shall be positioned to the left of the object that it is used to label (the position where text typed immediately before the object would appear). |
| Right (Position Caption Right Of Object) | Specifies that an automatically inserted caption shall be positioned to the Right of the object that it is used to label (the position where text typed immediately after the object would appear). |

### ST\_ChapterSep (Chapter Separator Types)

This simple type specifies the character which shall be used to separate the chapter number from the page number for page numbers in a given section, when chapter numbers are being displayed.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| colon (Colon Chapter Separator) | Specifies that a colon character shall be used to separate the chapter number from the page number when page numbers are displayed. |
| emDash (Em Dash Chapter Separator) | Specifies that an em dash character shall be used to separate the chapter number from the page number when page numbers are displayed. |
| enDash (En Dash Chapter Separator) | Specifies that an en dash character shall be used to separate the chapter number from the page number when page numbers are displayed. |
| hyphen (Hyphen Chapter Separator) | Specifies that a non-breaking hyphen character shall be used to separate the chapter number from the page number when page numbers are displayed. |
| period (Period Chapter Separator) | Specifies that a period character shall be used to separate the chapter number from the page number when page numbers are displayed. |

### ST\_CharacterSpacing (Character-Level Whitespace Compression Settings)

This simple type specifies the possible ways in which full-width characters in the current WordprocessingML document can be compressed to remove additional whitespace when the contents of this document are displayed, specifically by specifying the set(s) of characters which can be compressed to remove additional whitespace.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| compressPunctuation (Compress Whitespace From Punctuation Characters) | Specifies that only whitespace characters shall have whitespace compression applied to them. |
| compressPunctuationAndJapaneseKana (Compress Whitespace From Both Japanese Kana And Punctuation Characters) | Specifies that whitespace and Japanese kana characters shall have whitespace compression applied to them. |
| doNotCompress (Do Not Compress Whitespace) | Specifies that characters shall not have whitespace compression applied to them. |

### ST\_CombineBrackets (Two Lines in One Enclosing Character Type)

This simple type specifies the kind of bracket character which shall be used to enclose the two lines in one text within the current run when displayed

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| angle (Angle Brackets) | Specifies that angle bracket characters shall be used to enclose the contents of the current run’s two lines in one text. |
| curly (Curly Brackets) | Specifies that curly bracket characters shall be used to enclose the contents of the current run’s two lines in one text. |
| none (No Enclosing Brackets) | Specifies that no characters shall be used to enclose the contents of the current run’s two lines in one text. |
| round (Round Brackets) | Specifies that round bracket characters shall be used to enclose the contents of the current run’s two lines in one text. |
| square (Square Brackets) | Specifies that square bracket characters shall be used to enclose the contents of the current run’s two lines in one text. |

### ST\_DateTime (Standard Date and Time Storage Format)

This simple type specifies that its contents contain a date in the standard XML Schema xsd:dateTime format, whose contents are interpreted based on the context of the parent XML element.

### ST\_DecimalNumber (Decimal Number Value)

This simple type specifies that its contents contain a whole decimal number (positive or negative), whose contents are interpreted based on the context of the parent XML element.

### ST\_DecimalNumberOrPercent (Percentage Measurement)

This simple type specifies that its contents will contain a percentage-based value. See the union's member types for details.

### ST\_Direction (Bidirectional Direction Types)

This simple type specifies the possible values for bidirectional settings within a WordprocessingML document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ltr (Left to Right) | Specifies a left-to-Right direction for the property defined by the parent XML element. |
| rtl (Right to Left) | Specifies a Right-to-left direction for the property defined by the parent XML element. |

### ST\_DisplacedByCustomXml (Location of Custom XML Markup Displacing an Annotation)

This simple type specifies the possible values for the location of a single custom XML element's start and/or end tag relative to the location of an annotation tag in document order. This enumeration shall be used to specify that the parent annotation's placement shall be directly linked with the location of the physical presentation of a custom XML element in the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| next (Displaced by Next Custom XML Markup Tag) | Specifies that this annotation anchor shall be displaced by the physical representation of the next element of custom XML markup in the document. |
| prev (Displaced by Previous Custom XML Markup Tag) | Specifies that this annotation anchor shall be displaced by the physical representation of the previous element of custom XML markup in the document. |

### ST\_DocGrid (Document Grid Types)

Specifies the kind of the current document grid, which defines the grid behavior.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| default (No Document Grid) | Specifies that no document grid shall be applied to the contents of the current section in the document. |
| lines (Line Grid Only) | Specifies that the parent section shall have additional line pitch added to each line within it (as specified on the docGrid element (§17.6.5)) in order to maintain the specified number of lines per page. |
| linesAndChars (Line and Character Grid) | Specifies that the parent section shall have both the additional line pitch and character pitch added to each line and character within it (as specified on the docGrid element (§17.6.5)) in order to maintain a specific number of lines per page and characters per line. |
| snapToChars (Character Grid Only) | Specifies that the parent section shall have both the additional line pitch and character pitch added to each line and character within it (as specified on the docGrid element (§17.6.5)) in order to maintain a specific number of lines per page and characters per line. |

### ST\_DocPartBehavior (Insertion Behavior Types)

This simple type specifies the possible sets of behaviors which can be applied to the contents of a single glossary document entry (§17.12.5) when it is added to the main document story of a WordprocessingML document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| content (Insert Content At Specified Location) | Specifies that when the glossary document entry is inserted into the main document contents of the document, it shall be inserted normally as defined above. |
| p (Ensure Entry Is In New Paragraph) | Specifies that the glossary document entry shall be added into its own unique paragraph, by failing to remove the last paragraph from the entry's contents when they are added to the document. |
| pg (Ensure Entry Is On New Page) | Specifies that the glossary document entry shall be added into its own new page, by preceding the entry with a blank paragraph whose only content is a page break character. |

### ST\_DocPartGallery (Entry Gallery Types)

This simple type specifies possible settings for the predefined gallery into which a glossary document part shall be classified. This classification, although its enumeration values can be interpreted to imply semantics around the contents of the parent glossary document entry, shall only be used to classify and sort this entry (via an application or a user interface).

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| any (All Galleries) | Specifies that this glossary document entry shall be associated with all possible gallery classification values. |
| autoTxt (AutoText Gallery) | Specifies that this glossary document entry shall be associated with the AutoText gallery classification. |
| bib (Bibliography Gallery) | Specifies that this glossary document entry shall be associated with the Bibliography gallery classification. |
| coverPg (Cover Page Gallery) | Specifies that this glossary document entry shall be associated with the Cover Page gallery classification. |
| custAutoTxt (Custom AutoText Gallery) | Specifies that this glossary document entry shall be associated with the Custom AutoText gallery classification. |
| custBib (Custom Bibliography Gallery) | Specifies that this glossary document entry shall be associated with the Custom Bibliography gallery classification. |
| custCoverPg (Custom Cover Page Gallery) | Specifies that this glossary document entry shall be associated with the Custom Cover Page gallery classification. |
| custEq (Custom Equation Gallery) | Specifies that this glossary document entry shall be associated with the Custom Equation gallery classification. |
| custFtrs (Custom Footer Gallery) | Specifies that this glossary document entry shall be associated with the Custom Footer gallery classification. |
| custHdrs (Custom Header Gallery)custom1 (Custom 1 Gallery) | Specifies that this glossary document entry shall be associated with the Custom Header gallery classification. |
| custom2 (Custom 2 Gallery) | Specifies that this glossary document entry shall be associated with the Custom 2 gallery classification. |
| custom3 (Custom 3 Gallery) | Specifies that this glossary document entry shall be associated with the Custom 3 gallery classification. |
| custom4 (Custom 4 Gallery) | Specifies that this glossary document entry shall be associated with the Custom 4 gallery classification. |
| custom5 (Custom 5 Gallery) | Specifies that this glossary document entry shall be associated with the Custom 5 gallery classification. |
| custPgNum (Custom Page Number Gallery) | Specifies that this glossary document entry shall be associated with the Custom Page Number gallery classification. |
| custPgNumB (Custom Page Number At Bottom Gallery) | Specifies that this glossary document entry shall be associated with the Custom Page Number At Bottom gallery classification. |
| custPgNumMargins (Custom Page Number At Margins Gallery) | Specifies that this glossary document entry shall be associated with the Custom Page Number At Margins gallery classification. |
| custPgNumT (Custom Page Number At Top Gallery) | Specifies that this glossary document entry shall be associated with the Custom Page Number At Top gallery classification. |
| custQuickParts (Custom Quick Parts Gallery) | Specifies that this glossary document entry shall be associated with the Custom Quick Parts gallery classification. |
| custTblOfContents (Custom Table of Contents Gallery) | Specifies that this glossary document entry shall be associated with the Custom Table of Contents gallery classification. |
| custTbls (Custom Table Gallery) | Specifies that this glossary document entry shall be associated with the Custom Tables gallery classification. |
| custTxtBox (Custom Text Box Gallery) | Specifies that this glossary document entry shall be associated with the Custom Text Box gallery classification. |
| custWatermarks (Custom Watermark Gallery) | Specifies that this glossary document entry shall be associated with the Custom Watermark gallery classification. |
| default (No Gallery Classification) | Specifies that this glossary document entry shall not have a gallery classification. |
| docParts (Document Parts Gallery) | Specifies that this glossary document entry shall be associated with the Document Parts gallery classification. |
| eq (Equations Gallery) | Specifies that this glossary document entry shall be associated with the Equations gallery classification. |
| ftrs (Footers Gallery) | Specifies that this glossary document entry shall be associated with the Footers gallery classification. |
| hdrs (Headers Gallery) | Specifies that this glossary document entry shall be associated with the Headers gallery classification. |
| pgNum (Page Numbers Gallery) | Specifies that this glossary document entry shall be associated with the Page Numbers gallery classification. |
| pgNumB (Page Numbers At Bottom Gallery) | Specifies that this glossary document entry shall be associated with the Page Numbers At Bottom gallery classification. |
| pgNumMargins (Page Numbers At Margins Gallery) | Specifies that this glossary document entry shall be associated with the Page Numbers At Margins gallery classification. |
| pgNumT (Page Numbers At Top Gallery) | Specifies that this glossary document entry shall be associated with the Page Numbers At Top gallery classification. |
| placeholder (Structured Document Tag Placeholder Text Gallery) | Specifies that this glossary document entry shall be associated with the Structured Document Tag Placeholder Text gallery classification. |
| tblOfContents (Table of Contents Gallery) | Specifies that this glossary document entry shall be associated with the Table of Contents gallery classification. |
| tbls (Table Gallery) | Specifies that this glossary document entry shall be associated with the Tables gallery classification. |
| txtBox (Text Box Gallery) | Specifies that this glossary document entry shall be associated with the Text Box gallery classification. |
| watermarks (Watermark Gallery) | Specifies that this glossary document entry shall be associated with the Watermark gallery classification. |

### ST\_DocPartType (Entry Types)

This simple type specifies the possible entry types which can be applied to the properties of a single glossary document entry (§17.12.5). Each of these entry types can, based on their values, influence the visibility and behavior of the parent glossary document entry.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| autoExp (Automatically Replace Name With Content) | Specifies that the type of the current glossary document entry shall allow the entry to be automatically inserted into the document whenever its name is entered into an application. |
| bbPlcHdr (Structured Document Tag Placeholder Text) | Specifies that the type of the current glossary document entry shall be structured document tag placeholder text. |
| formFld (Form Field Help Text) | Specifies that the type of the current glossary document entry shall be form field help text. |
| none (No Type) | Specifies no type information for the current glossary document entry. |
| normal (Normal) | Specifies that the type of the current glossary document entry shall be normal (i.e. a regular glossary document entry). |
| speller (AutoCorrect Entry) | Specifies that the type of the current glossary document entry shall be associated with the spelling and grammar tools. |
| toolbar (AutoText User Interface Entry) | Specifies that the type of the current glossary document entry shall be associated with a special grouping of entries associated with a single piece of user interface. |

### ST\_DocProtect (Document Protection Types)

This simple type specifies the possible set of editing restrictions which can be enforced on a given WordprocessingML document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| comments (Allow Editing of Comments) | Specifies that the edits made to this document shall be restricted to: |
| forms (Allow Editing of Form Fields) | Specifies that the edits made to this document shall be restricted to: |
| none (No Editing Restrictions) | Specifies that no editing restrictions have been applied to the document. |
| readOnly (Allow No Editing) | Specifies that the edits made to this document shall be restricted to: |
| trackedChanges (Allow Editing With Revision Tracking) | Specifies that the edits made to this document shall be tracked as revisions. This value shall imply the presence of the trackRevisions element |

### ST\_DocType (Document Classification Values)

This simple type specifies the possible classifications that can be used for a WordprocessingML document.

|  |  |
| --- | --- |
| **Value** | **Description** |
| eMail (E-Mail Message) | Specifies that this document shall be classified as an email message. |
| letter (Letter) | Specifies that this document shall be classified as a letter. |
| notSpecified (Default Document) | Specifies that this document shall be classified as a default document. |

### ST\_DropCap (Text Frame Drop Cap Location)

This simple type specifies the location which shall be used to position a drop cap text frame when the contents of that text frame are displayed in the anchor paragraph at display time.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| drop (Drop Cap Inside Margin) | Specifies that the drop cap text frame shall be positioned inside the text margin on the anchor paragraph when this text frame is displayed in the document. |
| margin (Drop Cap Outside Margin) | Specifies that the drop cap text frame shall be positioned outside of the text margin on the anchor paragraph when this text frame is displayed in the document. |
| none (Not Drop Cap) | Specifies that this text frame is not a drop cap text frame. |

### ST\_EdGrp (Range Permission Editing Group)

This simple type specifies the set of possible aliases (or editing groups) which can be used as aliases to determine if the current user shall be allowed to edit a single range defined by a range permission within a document. This mechanism simply provides a set of predefined editing groups which can be associated with user accounts by applications in any desired manner.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| administrators (Administrator Group) | Specifies that users associated with the Administrators group shall be allowed to edit range permissions using this editing group when document protection is enabled. |
| contributors (Contributors Group) | Specifies that users associated with the Contributors group shall be allowed to edit range permissions using this editing group when document protection is enabled. |
| current (Current Group) | Specifies that users associated with the Current group shall be allowed to edit range permissions using this editing group when document protection is enabled. |
| editors (Editors Group) | Specifies that users associated with the Editors group shall be allowed to edit range permissions using this editing group when document protection is enabled. |
| everyone (All Users Have Editing Permissions) | Specifies that all users that open the document shall be allowed to edit range permissions using this editing group when document protection is enabled. |
| none (No Users Have Editing Permissions) | Specifies that none of the users that open the document shall be allowed to edit range permissions using this editing group when document protection is enabled. |
| owners (Owners Group) | Specifies that users associated with the Owners group shall be allowed to edit range permissions using this editing group when document protection is enabled. |

### ST\_EdnPos (Endnote Positioning Location)

This simple type specifies the possible positions of endnotes in a document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| docEnd (Endnotes Positioned at End of Document) | Specifies that all endnotes shall be placed at the end of the current document, regardless of which section they are referenced within. |
| sectEnd (Endnotes Positioned at End of Section) | Specifies that endnotes shall be placed at the end of the section in which they are referenced. |

### ST\_EighthPointMeasure (Measurement in Eighths of a Point)

This simple type specifies that its contents contain a positive whole number, whose contents consist of a measurement in eighths of a point (equivalent to 1/576th of an inch).

### ST\_Em (Emphasis Mark Type)

This simple type specifies an enumerated list of emphasis marks, any one of which may be selected to be applied to each non-space character in a run. When displayed, the position of the emphasis mark relative to the character to which it is applied is language- and writing-direction-dependent. When displayed, the glyph used for the emphasis mark is implementation-dependent.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| circle (Circle Emphasis Mark) | Specifies that the emphasis mark is a circle. [*Note*: The intent is to have an emphasis mark similar to the following: |
| comma (Comma Emphasis Mark) | Specifies that the emphasis mark is a comma. [*Note*: The intent is to have an emphasis mark similar to the following: |
| dot (Dot Emphasis Mark) | Specifies that the emphasis mark is a dot. [*Note*: The intent is to have an emphasis mark similar to the following: |
| none (No Emphasis Mark) | Specifies that no emphasis mark shall be applied to any characters in the run. |
| underDot (Dot Emphasis Mark Below Characters) | Specifies that the emphasis mark is a dot that shall be rendered below each character in horizontal writing and on the left in vertical writing. [*Note*: The intent is to have an emphasis mark similar to the following: ..(written horizontally in Japanese) |

### ST\_FFHelpTextVal (Help Text Value)

This simple type specifies the format of optional help text which can be associated with the parent form field.

### ST\_FFName (Form Field Name Value)

This simple type specifies the format of the name which can be associated with the parent form field.

### ST\_FFStatusTextVal (Status Text Value)

This simple type specifies the format of optional status text which can be associated with the parent form field.

### ST\_FFTextType (Text Box Form Field Type Values)

This simple type specifies the possible types of the contents of a text box form field.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| calculated (Field Calculation) | Specifies that the contents of this text box form field shall be the result of the field calculation specified by the corresponding default element (§17.16.10). |
| currentDate (Current Date Display) | Specifies that the contents of this text box form field shall be the current date when the field is updated. |
| currentTime (Current Time Display) | Specifies that the contents of this text box form field shall be the current time when the field is updated. |
| date (Date) | Specifies that the contents of this text box form field shall be treated as a date. |
| number (Number) | Specifies that the contents of this text box form field shall be treated as a number value. |
| regular (Text Box) | Specifies that this text form field is a plain text field (no additional content restrictions). |

### ST\_FldCharType (Complex Field Character Type)

This simple type specifies the possible values for the type of a single complex field character in the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| begin (Start Character) | Specifies that the character is a start character, which defines the start of a complex field. |
| end (End Character) | Specifies that the character is an end character, which defines the end of a complex field. |
| separate (Separator Character) | Specifies that the character is a separator character, which defines the end of the field codes and the start of the field result for a complex field. |

### ST\_FontFamily (Font Family Value)

This simple type specifies possible values for the font family of a font.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| auto (No Font Family) | Specifies that information about a font's font family does not exist. |
| decorative (Novelty Font) | Specifies the Novelty font family. |
| modern (Monospace Font) | Specifies a monospace font with or without serifs (monospace fonts are usually modern). |
| roman (Proportional Font With Serifs) | Specifies a proportional font with serifs. |
| script (Script Font) | Specifies a script font designed to mimic the appearance of handwriting. |
| swiss (Proportional Font Without Serifs) | Specifies a proportional font without serifs. |

### ST\_FrameLayout (Frameset Layout Order)

This simple type specifies the possible order in which the frames (and nested framesets) in a frameset can be displayed. When a frameset is created, it can only contain frames which are stacked in one direction:

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| cols (Stack Frames Horizontally) | Specifies that the frames in the frameset shall be stacked horizontally next to each other in left to Right order. |
| none (Do Not Stack Frames) | Specifies that no frames shall be shown in the frameset. |
| rows (Stack Frames Vertically) | Specifies that the frames in the frameset shall be stacked vertically next to each other in top to bottom order. |

### ST\_FrameScrollbar (Frame Scrollbar Visibility)

This simple type specifies the possible settings for when a scrollbar shall be visible for the contents of the current frame.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| auto (Automatically Show Scrollbar As Needed) | Specifies that the scrollbar for a frame shall automatically be hidden and/or displayed as needed based on the length of the contents. |
| off (Never Show Scrollbar) | Specifies that the scrollbar for a frame shall always be hidden. |
| on (Always Show Scrollbar) | Specifies that the scrollbar for a frame shall always be displayed (even when not needed). |

### ST\_FtnEdn (Footnote or Endnote Type)

This simple type specifies the possible types of footnotes and endnotes which can be specified in a WordprocessingML document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| continuationNotice (Continuation Notice Separator) | Specifies that this footnote or endnote is a continuation notice footnote or endnote. |
| continuationSeparator (Continuation Separator) | Specifies that this footnote or endnote is a continuation separator footnote or endnote. |
| normal (Normal Footnote/Endnote) | Specifies that this footnote or endnote is a normal footnote or endnote and can be referenced by main document content. |
| separator (Separator) | Specifies that this footnote or endnote is a separator footnote or endnote. |

### ST\_FtnPos (Footnote Positioning Location)

This simple type specifies the position of footnotes in the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| beneathText (Footnotes Positioned Beneath Text) | Specifies that footnotes shall be displayed immediately after the last line of text on the page on which the note reference mark appears. |
| docEnd (Footnotes Positioned At End of Document) | Specifies that all footnotes shall be placed at the end of the current document, regardless of which section they are referenced within. |
| pageBottom (Footnotes Positioned at Page Bottom) | Specifies that footnotes shall be displayed at the bottom margin of the page on which the note reference mark appears. |
| sectEnd (Footnotes Positioned At End of Section) | Specifies that all footnotes shall be placed at the end of the section in which they are referenced. |

### ST\_HAnchor (Horizontal Anchor Location)

This simple type specifies the horizontal position to which the parent object has been anchored in the document. This anchor position shall be used as the base location to determine the final horizontal position of the object in the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| margin (Relative To Margin) | Specifies that the parent object shall be horizontally anchored to the text margins. |
| page (Relative to Page) | Specifies that the parent object shall be horizontally anchored to the page edge. |
| text (Relative to Text Extents) | Specifies that the parent object shall be horizontally anchored to the text extents. |

### ST\_HdrFtr (Header or Footer Type)

This simple type specifies the possible types of headers and footers which can be specified for a given header or footer reference in a document. This value determines the page(s) on which the current header or footer shall be displayed.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| default (Default Header or Footer) | Specifies that this header or footer shall appear on every page in this section which is not overridden with a specific even or first page header/footer. |
| even (Even Numbered Pages Only) | Specifies that this header or footer shall appear on all even numbered pages in this section (counting from |
| first (First Page Only) | Specifies that this header or footer shall appear on the first page in this section. |

### ST\_HeightRule (Height Rule)

This simple type specifies the logic which shall be used to calculate the height of the parent object when it is displayed in the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| atLeast (Minimum Height) | Specifies that the height of the parent object shall be at least the value specified but can be expanded to fit its content as needed. |
| auto (Determine Height Based On Contents) | Specifies that the height of the parent object shall be automatically determined by the size of its contents, with no predetermined minimum or maximum size. |
| exact (Exact Height) | Specifies that the height of the parent object shall be exactly the value specified, regardless of the size of the contents of the object. |

### ST\_HexColor (Color Value)

This simple type specifies that its contents contain one of the following:

### ST\_HexColorAuto (‘Automatic’ Color Value)

This simple type specifies that its contents contain the enumeration value auto. This value shall be used to specify an automatically determined color value, the meaning of which is interpreted based on the context of the parent XML element.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| auto (Automatically Determined Color) | Specifies that the color value can automatically be defined when this document is processed, based on the display context. |

### ST\_HighlightColor (Text Highlight Colors)

This simple type specifies the possible values for highlighting colors which can be applied as a background behind the contents of a text run.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| black (Black Highlighting Color) | Specifies that the text highlighting color for this run shall be black. |
| blue (Blue Highlighting Color) | Specifies that the text highlighting color for this run shall be blue. |
| cyan (Cyan Highlighting Color) | Specifies that the text highlighting color for this run shall be cyan. |
| darkBlue (Dark Blue Highlighting Color) | Specifies that the text highlighting color for this run shall be dark blue. |
| darkCyan (Dark Cyan Highlighting Color) | Specifies that the text highlighting color for this run shall be dark cyan. |
| darkGray (Dark Gray Highlighting Color) | Specifies that the text highlighting color for this run shall be dark gray. |
| darkGreen (Dark Green Highlighting Color) | Specifies that the text highlighting color for this run shall be dark green. |
| darkMagenta (Dark Magenta Highlighting Color) | Specifies that the text highlighting color for this run shall be dark magenta. |
| darkRed (Dark Red Highlighting Color) | Specifies that the text highlighting color for this run shall be dark red. |
| darkYellow (Dark Yellow Highlighting Color) | Specifies that the text highlighting color for this run shall be dark cyan. |
| green (Green Highlighting Color) | Specifies that the text highlighting color for this run shall be green. |
| lightGray (Light Gray Highlighting Color) | Specifies that the text highlighting color for this run shall be light gray. |
| magenta (Magenta Highlighting Color) | Specifies that the text highlighting color for this run shall be magenta. |
| none (No Text Highlighting) | Specifies that this text run shall have no text highlighting applied to its contents. |
| red (Red Highlighting Color) | Specifies that the text highlighting color for this run shall be red. |
| white (White Highlighting Color) | Specifies that the text highlighting color for this run shall be white. |
| yellow (Yellow Highlighting Color) | Specifies that the text highlighting color for this run shall be yellow. |

### ST\_Hint (Font Type Hint)

This simple type specifies information used to decide how to format any characters in the current run for which the font type is otherwise ambiguous.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| cs (Complex Script Font) | Specifies that the font hint for this text run shall be to use the Complex Script font defined for the run via the style hierarchy. |
| default (no font hint) | Specifies that no hint shall apply to this text run. |
| eastAsia (East Asian Font) | Specifies that the font hint for this text run shall be to use the East Asian font defined for the run via the style hierarchy. |

### ST\_HpsMeasure (Measurement in Half-Points)

This simple type specifies that its contents contain either:

### ST\_InfoTextType (Help or Status Text Type)

This simple type specifies the possible values for the type of help or status text which can be associated with a form field.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| autoText (Glossary Document Entry) | Specifies that the value specified by the parent XML element's val attribute shall be interpreted as the name of a glossary document entry whose contents contain the help or status text. |
| text (Literal Text) | Specifies that the value specified by the parent XML element's val attribute shall be interpreted as the literal text for the help or status text. |

### ST\_Jc (Horizontal Alignment Type)

This simple type specifies all types of alignment which are available to be applied to objects in a WordprocessingML document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| both (Justified) | Specifies that the text shall be justified between both of the text margins in the document. |
| center (Align Center) | Specifies that the text shall be centered on the line between both of the text margins in the document. |
| distribute (Distribute All Characters Equally) | Specifies that the text shall be justified between both of the text margins in the document. |
| end (Align to Trailing Edge) | Specifies that the text shall be aligned on the trailing text margin in the document (Right for left-to-Right paragraphs; left for Right-to-left paragraphs). |
| highKashida (Widest Kashida Length) | Specifies that the Kashida length for text in the current paragraph shall be extended to its widest possible length. |
| lowKashida (Low Kashida Length) | Specifies that the Kashida length for text in the current paragraph shall be extended to a slightly longer length. This setting shall also be applied to Arabic text when both setting is applied. |
| mediumKashida (Medium Kashida Length) | Specifies that the Kashida length for text in the current paragraph shall be extended to a medium length determined by the consumer. |
| numTab (Align to List Tab) | Specifies that the text shall be aligned to the list tab, which is the tab stop after the numbering for the current paragraph. |
| start (Align To Leading Edge) | Specifies that the text shall be aligned on the leading text margin in the document (left for left-to-Right paragraphs; Right for Right-to-left paragraphs). |
| thaiDistribute (Thai Language Justification) | Specifies that the text shall be justified with an optimization for Thai. |

### ST\_JcTable (Table Alignment Type)

This simple type specifies all types of alignment that are available to be applied to tables in a WordprocessingML document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| center (Align Center) | Specifies that the table shall be centered on the line between both of the text margins in the document. |
| end (Align to Trailing Edge) | Specifies that the table shall be aligned to the trailing edge of the text flow – the Right text margin (for a left-to-Right table); or the left text margin (for a Right-to-left table) in the document. (See §17.4.1) |
| start (Align to Starting Edge) | Specifies that the table shall be aligned to the leading edge of the text flow – the left text margin (for a left-to-Right table); or the Right text margin (for a Right-to-left table) in the document. (See §17.4.1) |

### ST\_LevelSuffix (Content Between Numbering Symbol and Paragraph Text)

This simple type specifies the types of content which shall be possible between a given numbering level's text and the text of every numbered paragraph which references that numbering level.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| nothing (Nothing Between Numbering and Text) | Specifies that no character shall be displayed between the numbering level's text and the contents of the paragraph when displaying the numbered paragraph. |
| space (Space Between Numbering and Text) | Specifies that a space character shall be displayed between the numbering level's text and the contents of the paragraph when displaying the numbered paragraph. |
| tab (Tab Between Numbering and Text) | Specifies that a tab character shall be displayed between the numbering level's text and the contents of the paragraph when displaying the numbered paragraph. |

### ST\_LineNumberRestart (Line Numbering Restart Position)

This simple type specifies when the line numbering in the parent section shall be reset to its restart value. The line numbering increments for each line (even if the line number itself is not displayed) until it reaches the restart point specified by this element.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| continuous (Continue Line Numbering From Previous Section) | Specifies that line numbering for the parent section shall continue from the line numbering from the end of the previous section, if any. |
| newPage (Restart Line Numbering on Each Page) | Specifies that line numbering for the parent section shall restart to the starting value whenever a new page is displayed. |
| newSection (Restart Line Numbering for Each Section) | Specifies that line numbering for the parent section shall restart to the starting value whenever the parent begins. |

### ST\_LineSpacingRule (Line Spacing Rule)

This simple type specifies the logic which shall be used to calculate the line spacing of the parent object when it is displayed in the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| atLeast (Minimum Line Height) | Specifies that the height of the line shall be at least the value specified but might be expanded to fit its content as needed. |
| auto (Automatically Determined Line Height) | Specifies that the line spacing of the parent object shall be automatically determined by the size of its contents, with no predetermined minimum or maximum size. |
| exact (Exact Line Height) | Specifies that the height of the line shall be exactly the value specified, regardless of the size of the contents of the contents. |

### ST\_Lock (Locking Types)

This simple type specifies the possible set of locking behaviors that can be applied to the contents of the nearest ancestor structured document tag when the contents of this document are edited by an application (whether through a user interface or directly).

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| contentLocked (Contents Cannot Be Edited At Runtime) | Specifies that the editing restriction applied to the nearest ancestor structured document tag shall be as follows: |
| sdtContentLocked (Contents Cannot Be Edited At Runtime And SDT Cannot Be Deleted) | Specifies that the editing restriction applied to the nearest ancestor structured document tag shall be as follows: |
| sdtLocked (SDT Cannot Be Deleted) | Specifies that the editing restriction applied to the nearest ancestor structured document tag shall be as follows: |
| unlocked (No Locking) | Specifies that no special locking behaviors shall be applied to the nearest ancestor structured document tag. |

### ST\_LongHexNumber (Eight Digit Hexadecimal Value)

This simple type specifies a number value specified as a four octet (eight digit) hexadecimal number, whose contents are interpreted based on the context of the parent XML element.

### ST\_MacroName (Script Subroutine Name Value)

This simple type specifies a subroutine in a scripting language which can be executed based on the context of the parent XML element. The language and location of this subroutine can be determined using any method desired by an application.

### ST\_MailMergeDataType (Mail Merge Data Source Type Values)

This simple type specifies the data source access mechanism used to connect to the data source for a mail merge. This setting is purely a suggestion of the data source access mechanism which shall be used, and can be ignored in favor of an alternative mechanism if one is present.

|  |  |
| --- | --- |
| **Value** | **Description** |
| native (Office Data Source Object Data Source) | Specifies that a given merged WordprocessingML document has been connected to an external data source via the data stored in the Office Data Source Object (ODSO) interface (§17.14.25). |
| odbc (Open Database Connectivity Data Source) | Specifies that a given merged WordprocessingML document has been connected to an external data source via ODBC. |
| query (Query Data Source) | Specifies that a given merged WordprocessingML document has been connected to an external data source using an external query file. |
| soap (SOAP Data Source) | Specifies that a given WordprocessingML document has been connected to a data source using SOAP. |
| spreadsheet (Spreadsheet Data Source) | Specifies that a given WordprocessingML document has been connected to a spreadsheet. |
| textFile (Text File Data Source) | Specifies that a given WordprocessingML document has been connected to a text file. |
| xQuery (Text File Data Source) | Specifies that a given WordprocessingML document |
| xmlFile (XML File Data Source) | Specifies that a given WordprocessingML document has been connected to an XML file. |

### ST\_MailMergeDest (Merged Document Destination Types)

This simple type specifies the possible results which can be generated when a mail merge is carried out on a given WordprocessingML source document. In other words, this element is used to specify what is to be done with the merged documents that result from populating the fields within a given merged WordprocessingML document with data from the specified external data source.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| email (Send Merged Documents as E-mail Messages) fax (Send Merged Documents as Faxes) | Specifies that conforming hosting applications shall generate emails using the documents that result from populating the fields within a given merged WordprocessingML document with data from the specified external data source. |
| newDocument (Send Merged Documents to New Documents) | Specifies that conforming hosting applications shall generate new documents by populating the fields within a given merged WordprocessingML document with data from the specified external data source. |
| printer (Send Merged Documents to Printer) | Specifies that conforming hosting applications shall print the documents that result from populating the fields within a given merged WordprocessingML document with external data from the specified external data source. |

### ST\_MailMergeDocType (Source Document Types)

This simple types specifies the possible types for a given WordprocessingML source document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| catalog (Catalog Source Document) | Specifies that the mail merge source document is of the catalog type. |
| email (E-Mail Source Document) | Specifies that the mail merge source document is of the e-mail message type. |
| envelopes (Envelope Source Document) | Specifies that the mail merge source document is of the envelope type. |
| fax (Fax Source Document) | Specifies that the mail merge source document is of |
| formLetters (Form Letter Source Document) | Specifies that the mail merge source document is of the form letter type. |
| mailingLabels (Mailing Label Source Document) | Specifies that the mail merge source document is of the mailing label type. |

### ST\_MailMergeOdsoFMDFieldType (Merge Field Mapping Types)

This simple types specifies the possible types used to indicate if a given mail merge field has been mapped to a column in the given external data source.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| dbColumn (Field Mapping to Data Source Column) | Specifies that the mail merge field has been mapped to a column in the given external data source. |
| null (Field Not Mapped) | Specifies that the mail merge field has not been mapped to a column in the given external data source. |

### ST\_MailMergeSourceType (Mail Merge ODSO Data Source Types)

This simple type specifies the type of external data source to be connected to via as part of the ODSO connection information for this mail merge. This setting is purely a suggestion of the data source type, which is being used for this mail merge, and can be ignored in favor of an alternative mechanism if one is present.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| addressBook (Address Book Data Source) | Specifies that a given merged WordprocessingML document has been connected to an address book of contacts. |
| database (Database Data Source) | Specifies that a given merged WordprocessingML document has been connected to a database. |
| document1 (Alternate Document Format Data Source) | Specifies that a given merged WordprocessingML document has been connected to another document format supported by the producing application. The format of this document is application-defined and outside the scope of ECMA-376. |
| document2 (Alternate Document Format Data Source Two) | Specifies that a given merged WordprocessingML document has been connected to another document format supported by the producing application. The format of this document is application-defined and outside the scope of ECMA-376. |
| email (E-Mail Program Data Source) | Specifies that a given merged WordprocessingML document has been connected to an e-mail application. |
| legacy (Legacy Document Format Data Source) | Specifies that a given merged WordprocessingML document has been connected to a legacy document format supported by the producing application. The format of this legacy document is application-defined and outside the scope of ECMA-376. |
| master (Aggregate Data Source) | Specifies that a given merged WordprocessingML |
| native (Native Data Souce) | Specifies that a given merged WordprocessingML document has been connected to another document format native to the producing application. The format of this document is application-defined and outside the scope of ECMA-376. |
| text (Text File Data Source) | Specifies that a given merged WordprocessingML document has been connected to a text file. |

### ST\_Merge (Merged Cell Type)

This element specifies the way in which a cell shall be included in a merged group of cells (horizontally or vertically) within the parent table.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| continue (Continue Merged Region) | Specifies that the current cell continues a previously existing merged group of cells in the parent table. |
| restart (Start/Restart Merged Region) | Specifies that the current cell starts (or restarts) a group of merged cells in the parent table. |

### ST\_MultiLevelType (Numbering Definition Type)

This simple type specifies the possible types of numbering which can be defined by a given abstract numbering type. This information shall only be used by a consumer to determine user interface behaviors for this numbering definition and shall not be used to limit the behavior of the list (i.e. a list with multiple levels marked as singleLevel shall not be prevented from using levels 2 through 9).

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| hybridMultilevel (Hybrid Multilevel Numbering Definition) | Specifies that this numbering definition defines a numbering format consisting of a multiple levels, each of a potentially different kind (bullets vs. level text). |
| multilevel (Multilevel Numbering Definition) | Specifies that this numbering definition defines a numbering format consisting of a multiple levels, each of the same kind (bullets vs. level text). |
| singleLevel (Single Level Numbering Definition) | Specifies that this numbering definition defines a numbering format consisting of a single level only. |

### ST\_NumberFormat (Numbering Format)

This simple type specifies the numbering format which shall be used for a group of automatically numbered objects,

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| aiueo (AIUEO Order Half-Width Katakana) | Specifies that the sequence shall consist of one or more occurrences of a single half-width Katakana character from the set listed below, in the traditional a-i-u-e-o order. |
| aiueoFullWidth (AIUEO Order Full-Width Katakana) | Specifies that the sequence shall consist of one or more occurrences of a single full-width katakana character from the set listed below, in the traditional a-i-u-e-o order. |
| arabicAbjad (Arabic Abjad Numerals) | Specifies that the sequence shall consist of one or more occurrences of a single ascending Abjad numeral from the set listed below. |
| arabicAlpha (Arabic Alphabet) | Specifies that the sequence shall consist of one or more occurrences of a single character in the Arabic alphabet from the set listed below. |
| bahtText (Thai Baht Text) | Specifies that the sequence shall consist of a numeric value from the Thai counting system, with บาทถว้ น appended to the result. |
| bullet (Bullet) | Specifies that the sequence shall consist of the bullet character defined by the lvlText element (§17.9.11). |
| cardinalText (Cardinal Text) | Specifies that the sequence shall consist of cardinal text of the run language. |
| chicago (Chicago Manual of Style) | Specifies that the sequence shall consist of one or more occurrences of a single character from the set listed below. |
| chineseCounting (Chinese Counting System) | Specifies that the sequence shall consist of one or more occurrences of a single ascending number from the Chinese counting system, from the set listed below. |
| chineseCountingThousand (Chinese Counting Thousand System) | Specifies that the sequence shall consist of one or more occurrences of a single sequential number from the Chinese counting thousand system. |
| chineseLegalSimplified (Chinese Legal Simplified Format) | Specifies that the sequence shall consist of one or more occurrences of a single sequential number from the Chinese simplified legal format |
| chosung (Korean Chosung Numbering) | Specifies that the sequence shall consist of one or more occurrences of a single sequential number from the Korean Chosung format. |
| custom (Custom Defined Number Format) | Specifies a custom number format using the parent element's attribute to specify a number format using the mechanism defined by the XSLT format attribute. |
| decimal (Decimal Numbers) | Specifies that the sequence shall consist of decimal numbering. |
| decimalEnclosedCircle (Decimal Numbers Enclosed in a Circle) | Specifies that the sequence shall consist of decimal numbering enclosed in a circle, using the enclosed character. |
| decimalEnclosedCircleChinese (Decimal Numbers Enclosed in a Circle) | Identical to decimalEnclosedCircle. |
| decimalEnclosedFullstop (Decimal Numbers Followed by a Period) | Specifies that the sequence shall consist of decimal numbering followed by a period, using the appropriate character, as described below. |
| decimalEnclosedParen (Decimal Numbers Enclosed in Parenthesis) | Specifies that the sequence shall consist of decimal numbering enclosed in parentheses, using the appropriate character, as described below. |
| decimalFullWidth (Full Width Arabic Numerals) | Specifies that the sequence shall consist of full-width Arabic numbering. |
| decimalHalfWidth (Half Width Arabic Numerals) | Specifies that the sequence shall consist of half-width Arabic numbering. |
| decimalZero (Initial Zero Arabic Numerals) | Specifies that the sequence shall consist of Arabic numbering with a zero added to numbers one through nine. |
| dollarText (Dollar Text) | Specifies that the sequence shall consist of a cardinal text value of the run language, with "and 00/100" (also in the run language) appended to the result. [*Note*: The latter text is fixed because values in numbering sequences are integer-based. *end note*] |
| ganada (Korean Ganada Numbering) | Specifies that the sequence shall consist of one or more occurrences of a single sequential number from the Korean Ganada format, from the set listed below. |
| hebrew1 (Hebrew Letters) | Specifies that the sequence shall consist of Hebrew letters from the set listed belo |
| hebrew2 (Hebrew Alphabet) | Specifies that the sequence shall consist of the Hebrew alphabet. |
| hex (Hexadecimal Numbering) | Specifies that the sequence shall consist of hexadecimal numbering. |
| hindiConsonants (Hindi Consonants) | Specifies that the sequence shall consist of one or more occurrences of a single Hindi consonant from the set listed below. |
| hindiCounting (Hindi Counting System) | Specifies that the sequence shall consist of sequential numbers from the Hindi counting system. |
| hindiNumbers (Hindi Numbers) | Specifies that the sequence shall consist of one or more occurrences of a single Hindi number. |
| hindiVowels (Hindi Vowels) | Specifies that the sequence shall consist of one or more occurrences of a single Hindi vowel. |
| ideographDigital (Ideographs) | Specifies that the sequence shall consist of sequential numerical ideographs, using the appropriate character. |
| ideographEnclosedCircle (Ideographs Enclosed in a Circle) | Specifies that the sequence shall consist of sequential numerical ideographs, using the appropriate character. |
| ideographLegalTraditional (Traditional Legal Ideograph Format) | Specifies that the sequence shall consist of sequential numerical traditional legal ideographs. |
| ideographTraditional (Traditional Ideograph Format) | Specifies that the sequence shall consist of sequential numerical traditional ideographs. |
| ideographZodiac (Zodiac Ideograph Format) | Specifies that the sequence shall consist of sequential zodiac ideographs. |
| ideographZodiacTraditional (Traditional Zodiac Ideograph Format) | Specifies that the sequence shall consist of sequential traditional zodiac ideographs. |
| iroha (Iroha Ordered Katakana) | Specifies that the sequence shall consist of the iroha. |
| irohaFullWidth (Full-Width Iroha Ordered Katakana) | Specifies that the sequence shall consist of the fullwidth forms of the iroha. |
| japaneseCounting (Japanese Counting System) | Specifies that the sequence shall consist of sequential numbers from the Japanese counting system. |
| japaneseDigitalTenThousand (Japanese Digital Ten Thousand Counting System) | Specifies that the sequence shall consist of sequential numbers from the Japanese digital ten thousand counting system. |
| japaneseLegal (Japanese Legal Numbering) | Specifies that the sequence shall consist of sequential numbers from the Japanese legal counting system. |
| koreanCounting (Korean Counting System) | Specifies that the sequence shall consist of sequential numbers from the Korean counting system. |
| koreanDigital (Korean Digital Counting System) | Specifies that the sequence shall consist of sequential numbers from the Korean digital counting system. |
| koreanDigital2 (Korean Digital Counting System Alternate) | Specifies that the sequence shall consist of sequential numbers from the Korean digital counting system. |
| koreanLegal (Korean Legal Numbering) | Specifies that the sequence shall consist of sequential numbers from the Korean legal numbering system. |
| lowerLetter (Lowercase Latin Alphabet) | Specifies that the sequence shall consist of one or more occurrences of a single letter of the Latin alphabet in lower case. |
| lowerRoman (Lowercase Roman Numerals) | Specifies that the sequence shall consist of lowercase roman numerals. |
| none (No Numbering) | Specifies that the sequence shall not display any numbering. |
| numberInDash (Number With Dashes) | Specifies that the sequence shall consist of the Arabic numbering surrounded by hyphen-minus characters (U+002D). |
| ordinal (Ordinal) | Specifies that the sequence shall consist of ordinals of the run language. |
| ordinalText (Ordinal Text) | Specifies that the sequence shall consist of ordinal text of the run language. |
| russianLower (Lowercase Russian Alphabet) | Specifies that the sequence shall consist of one or more occurrences of a single letter of the Russian alphabet in lower case. |
| russianUpper (Uppercase Russian Alphabet) | Specifies that the sequence shall consist of one or more occurrences of a single letter of the Russian alphabet in upper case. |
| taiwaneseCounting (Taiwanese Counting System) | Specifies that the sequence shall consist of sequential numbers from the Taiwanese counting system. |
| taiwaneseCountingThousand (Taiwanese Counting Thousand System) | Specifies that the sequence shall consist of sequential numbers from the Taiwanese counting thousand system. |
| thaiCounting (Thai Counting System) | Specifies that the sequence shall consist of sequential numbers from the Thai counting system. |
| thaiLetters (Thai Letters) | Specifies that the sequence shall consist of one or more occurrences of a single Thai letter. |
| thaiNumbers (Thai Numerals) | Specifies that the sequence shall consist of Thai numerals. |
| upperLetter (Uppercase Latin Alphabet) | Specifies that the sequence shall consist of one or more occurrences of a single letter of the Latin alphabet in upper case. |
| upperRoman (Uppercase Roman Numerals) | Specifies that the sequence shall consist of uppercase roman numerals. |
| vietnameseCounting (Vietnamese Numerals) | Specifies that the sequence shall consist of Vietnamese numerals. |

### ST\_ObjectDrawAspect (Embedded Object Representations)

This simple type specifies the ways in which embedded objects are displayed in the application.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| content (Snapshot) | The object's presentation is a picture of the contained document (provided by the object's server application). |
| icon (Icon) | The object's presentation is an icon. |

### ST\_ObjectUpdateMode (Embedded Object Update Modes)

This simple type specifies how an embedded object is updated.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| always (Server Application Update) | The object is updated whenever the object's server application indicates there is new data available. |
| onCall (User Update) | The object is updated when the user chooses to update it. |

### ST\_PageBorderDisplay (Page Border Display Options)

This simple type specifies the pages in the parent section on which the page border shall be printed.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| allPages (Display Page Border on All Pages) | Specifies that the page border shall be displayed on all pages in the parent section. |
| firstPage (Display Page Border on First Page) | Specifies that the page border shall be displayed on only the first page in the parent section. |
| notFirstPage (Display Page Border on All Pages ExceptFirst) | Specifies that the page border shall be displayed on only the first page in the parent section. |

### ST\_PageBorderOffset (Page Border Positioning Base)

This simple type specifies how the relative positioning of the page borders shall be calculated.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| page (Page Border Is Positioned Relative to Page Edges) | Specifies that the space attribute on each page border shall be interpreted as the distance from the edge of the page that shall be left before the page border. |
| text (Page Border Is Positioned Relative to Text Extents) | Specifies that the space attribute on each page border shall be interpreted as the distance from the edge of the text extents (text margins) that shall be left before the page border.. |

### ST\_PageBorderZOrder (Page Border Z-Order)

This simple type specifies whether the page border is positioned above or below intersecting texts and objects in this document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| back (Page Border Behind Text) | Specifies that the page border shall be rendered beneath any text or object which intersects it - effectively placing it at the lowest z-order on the page. |
| front (Page Border Ahead of Text) | Specifies that the page border shall be rendered above any text or object which intersects it - effectively placing it at the highest z-order on the page. |

### ST\_PageOrientation (Page Orientation)

This simple type specifies the orientation of all pages in the parent section. This information is used to determine the actual paper size to use when printing the file.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| landscape (Landscape Mode) | Specifies that pages in this section shall be printed in landscape mode, which prints the page contents with a 90 degree rotation with respect to the normal page orientation. |
| portrait (Portrait Mode) | Specifies that pages in this section shall be printed in portrait mode. |

### ST\_Pitch (Font Pitch Value)

This simple type specifies the possible values for the font pitch of a font.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| default (Default) | Specifies that no information is available about the pitch of a font. |
| fixed (Fixed Width) | Specifies that this is a fixed width font. |
| variable (Proportional Width) | Specifies that this is a proportional width font. |

### ST\_PixelsMeasure (Measurement in Pixels)

This simple type specifies that its contents contain a positive whole number, whose contents consist of a measurement in pixels.

### ST\_PointMeasure (Measurement in Points)

This simple type specifies that its contents contain a positive whole number, whose contents consist of a measurement in points (equivalent to 1/72nd of an inch).

### ST\_Proof (Proofing State Values)

This simple type specifies the values which can be used to indicate the status of a given hosting application's grammar and spell checking when a given WordprocessingML document was last saved.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| clean (Check Completed) | Specifies that the given proofing engine completed checking the document when it was last saved. |
| dirty (Check Not Completed) | Specifies that the given proofing engine did not complete checking the document when it was last saved. |

### ST\_ProofErr (Proofing Error Type)

This simple type specifies the possible values for the types of proofing error markers which can appear in the contents of a WordprocessingML document to indicate the last known state of any spell- and grammar-checking performed on the contents of this document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| gramEnd (End of Region Marked as Grammatical Error) | Specifies that this proofing error marker shall indicate the start of a region to be marked as a grammatical error in the document. |
| gramStart (Start of Region Marked as Grammatical Error) | Specifies that this proofing error marker shall indicate the end of a region to be marked as a grammatical error in the document. |
| spellEnd (End of Region Marked as Spelling Error) | Specifies that this proofing error marker shall indicate the end of a region to be marked as a spelling error in the document. |
| spellStart (Start of Region Marked as Spelling Error) | Specifies that this proofing error marker shall indicate the start of a region to be marked as a spelling error in the document. |

### ST\_PTabAlignment (Absolute Position Tab Alignment)

This simple type specifies the alignment of an absolutely positioned tab character in a document. This alignment value determines the position on the line to which this absolute tab shall advance, as well as the alignment of the text entered after the alignment tab character position.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| center (Center) | Specifies that the positional tab should be center aligned on the line relative to the specified base (the text margins with or without indents), and that the text at that location shall be center aligned. |
| left (Left) | Specifies that the positional tab should be left aligned on the line relative to the specified base (the text margins with or without indents), and that the text at that location shall be left aligned. |
| Right (Right) | Specifies that the positional tab should be Right aligned on the line relative to the specified base (the text margins with or without indents), and that the text at that location shall be Right aligned. |

### ST\_PTabLeader (Absolute Position Tab Leader Character)

This simple type specifies the characters which can be used to fill in the space created by a positional tab. This character shall be repeated as required to completely fill the tab spacing generated by the positional tab character.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| dot (Dot Leader Character) | Specifies that the leader character for this positional |
| hyphen (Hyphen Leader Character) | Specifies that the leader character for this positional tab stop shall be a hyphen. |
| middleDot (Centered Dot Leader Character) | Specifies that the leader character for this positional tab stop shall be a centered dot. |
| none (No Leader Character) | Specifies that there shall be no leader character for this positional tab. |
| underscore (Underscore Leader Character) | Specifies that the leader character for this positional tab stop shall be an underscore. |

### ST\_PTabRelativeTo (Absolute Position Tab Positioning Base)

Specifies the possible extents which can be used to calculate the absolute positioning of this positional tab character.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| indent (Relative To Indents) | Specifies that the absolute positioning of the tab shall be relative to the indents. |
| margin (Relative To Text Margins) | Specifies that the absolute positioning of the tab shall be relative to the margins. |

### ST\_RestartNumber (Footnote/Endnote Numbering Restart Locations)

This simple type specifies the possible values for when the automatic numbering of footnotes or endnotes shall be restarted.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| continuous (Continue Numbering From Previous Section) | Specifies that the numbering of footnotes or endnotes shall continue from the previous section in the document. |
| eachPage (Restart Numbering On Each Page) | Specifies that the numbering of footnotes or endnotes shall be restarted to its starting value for each unique page in the document. |
| eachSect (Restart Numbering For Each Section) | Specifies that the numbering of footnotes or endnotes shall be restarted to its starting value for each unique section in the document. |

### ST\_RubyAlign (Phonetic Guide Text Alignment)

This simple type specifies the possible alignment settings which can be used to determine the placement of phonetic guide text with respect to the base text when this phonetic guide is displayed.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| center (Center)distributeLetter (Distribute All Characters) | Specifies that the phonetic guide text shall be centered with respect to the base text in this document. |
| distributeSpace (Distribute all Characters w/ Additional Space On Either Side) | Specifies that the phonetic guide text shall be distributed with respect to the base text in this document, with additional space added to the guide text to ensure it is indented with respect to the base text. |
| left (Left Aligned) | Specifies that the phonetic guide text shall be left aligned with respect to the base text in this document. |
| Right (Right Aligned) | Specifies that the phonetic guide text shall be Right aligned with respect to the base text in this document. |
| rightVertical (Vertically Aligned to Right of Base Text) | Specifies that the phonetic guide text shall be Right aligned with respect to the base text in this document, and shall always be displayed vertically and to the Right of the base text, regardless of the alignment of the base text. |

### ST\_SdtDateMappingType (Date Storage Format Types)

This simple type specifies then possible types of translations which can be performed on the displayed date in a date picker structured document tag when the current contents are saved into the associated custom XML data via the dataBinding element (§17.5.2.6).

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| date (XML Schema Date Format) | Specifies that the date specified in the parent date picker structured document tag shall be converted to the xsd:date format when stored in a mapped XML element. |
| dateTime (XML Schema DateTime Format) | Specifies that the date specified in the parent date picker structured document tag shall be converted to the xsd:dateTime format when stored in a mapped XML element. |
| text (Same As Display) | Specifies that no translation shall be performed on the displayed date when stored in a mapped XML element - the mapped contents shall be the same as the displayed contents. |

### ST\_SectionMark (Section Type)

Specifies the kind of the current section.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| continuous (Continuous Section Break) | Specifies a continuous section break, which begin the new section on the following paragraph. This means that continuous section breaks might not specify certain page-level section properties, since they are inherited from the following section. These breaks, however, can specify other section properties, such as line numbering and footnote/endnote settings. |
| evenPage (Even Page Section Break) | Specifies an even page section break, which begins the new section on the next even-numbered page, leaving the next odd page blank if necessary. |
| nextColumn (Column Section Break) | Specifies a column section break, which begins the new section on the following column on the page. |
| nextPage (Next Page Section Break) | Specifies a next page section break, which begins the new section on the following page. |
| oddPage (Odd Page Section Break) | Specifies an odd page section break, which begins the new section on the next odd-numbered page, leaving the next even page blank if necessary. |

### ST\_Shd (Shading Patterns)

This simple type specifies the pattern that shall be used to lay the pattern color over the background color for shading.

### ST\_ShortHexNumber (Four Digit Hexadecimal Value)

This simple type specifies a number value specified as a two octet (four digit) hexadecimal number, whose contents are interpreted based on the context of the parent XML element.

### ST\_SignedHpsMeasure (Signed Measurement in Half-Points)

This simple type specifies that its contents contain either:

### ST\_SignedTwipsMeasure (Signed Measurement in Twentieths of a Point)

This simple type specifies that its contents contain either:

### ST\_StyleSort (Style Sort Settings)

This simple type specifies the ways in which the list of document styles can be ordered when they are displayed in a user interface.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| basedOn (Sort by Based On Style) | Specifies that styles which are visible should be sorted by the style on which they are based using the basedOn element (§**17.7.4.3**). |
| default (Sort by Default Method) | Specifies that styles which are visible should be sorted by the default sorting of the host application. |
| font (Sort by Font) | Specifies that styles which are visible should be sorted by the font which they apply. |
| name (Sort by Style Name) | Specifies that styles which are visible should be sorted by their names. |
| priority (Sort by Style Priority) | Specifies that styles which are visible should be sorted by their UI priority using the uiPriority element (§**17.7.4.19**). |
| type (Sort by Style Type) | Specifies that styles which are visible should be sorted by their style types (i.e. character, linked, paragraph). |

### ST\_StyleType (Style Types)

This simple type specifies the possible values for the types of style definitions defined within a WordprocessingML document. WordprocessingML supports six types of style definitions:

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| character (Character Style) | Specifies that the parent style definition is a character style. |
| numbering (Numbering Style) | Specifies that the parent style definition is a numbering style. |
| paragraph (Paragraph Style) | Specifies that the parent style definition is a paragraph style. |
| table (Table Style) | Specifies that the parent style definition is a table style. |

### ST\_TabJc (Custom Tab Stop Type)

This simple type specifies the available types of custom tab stop, which determines the behavior of the tab stop and the alignment which shall be applied to text entered at the current custom tab stop.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bar (Bar Tab) | Specifies that the current tab is a bar tab. A *bar tab* is a tab which does not result in a custom tab stop in the parent paragraph (this tab stop location shall be skipped when positioning custom tab characters), but instead shall be used to draw a vertical line (or bar) at this location in the parent paragraph. |
| center (Centered Tab) | Specifies that the current tab stop shall result in a location in the document where all following text is centered (i.e. all text runs following this tab stop and preceding the next tab stop shall be centered around the tab stop location). |
| clear (No Tab Stop) | Specifies that the current tab stop is cleared and shall be removed and ignored when processing the contents of this document. |
| decimal (Decimal Tab) | Specifies that the current tab stop shall result in a location in the document where all following text is aligned around the first decimal character in the following text runs. |
| end (Trailing Tab) | Specifies that the current tab stop shall result in a location in the document where all following text is aligned to its trailing edge (i.e. all text runs following this tab stop and preceding the next tab stop shall be aligned against the trailing edge with respect to the tab stop location). [*Example*: In an RTL paragraph, the trailing edge is the left edge, so text aligns to that edge, extending to the Right. *end example*] |
| num (List Tab) | Specifies that the current tab is a list tab, which is the tab stop between the numbering and the paragraph contents in a numbered paragraph. |
| start (Leading Tab) | Specifies that the current tab stop shall result in a location in the document where all following text is aligned to its leading edge (i.e. all text runs following this tab stop and preceding the next tab stop shall be aligned against the leading edge with respect to the tab stop location). |

### ST\_TabTlc (Custom Tab Stop Leader Character)

This simple type specifies the characters which can be used to fill in the space created by a tab which ends at this custom tab stop. The chosen character shall be repeated as required to completely fill the tab spacing generated by the tab character.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| dot (Dotted leader line) | Specifies that the leader character for this custom tab stop shall be a dot. |
| heavy (Heavy solid leader line) | Specifies that the leader character for this custom tab stop shall be a heavy solid line, or an underscore. |
| hyphen (Dashed tab stop leader line) | Specifies that the leader character for this custom tab stop shall be a hyphen. |
| middleDot (Middle dot leader line) | Specifies that the leader character for this custom tab stop shall be a centered dot. |
| none (No tab stop leader) | Specifies that there shall be no leader character for this custom tab. |
| underscore (Solid leader line) | Specifies that the leader character for this custom tab stop shall be an underscore. |

### ST\_TargetScreenSz (Target Screen Sizes for Generated Web Pages)

This simple type specifies possible ideal minimum target screen sizes (width by height, specified in pixels) for which web pages generated can be optimized when saving this document as a web page.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| 1024x768 (Optimize for 1024x768) | Specifies that web pages produced from this document should be optimized for a screen size of 1024x768. |
| 1152x882 (Optimize for 1152x882) | Specifies that web pages produced from this document should be optimized for a screen size of 1152x882. |
| 1152x900 (Optimize for 1152x900) | Specifies that web pages produced from this document should be optimized for a screen size of 1152x900. |
| 1280x1024 (Optimize for 1280x1024) | Specifies that web pages produced from this |
| 1600x1200 (Optimize for 1600x1200) | Specifies that web pages produced from this document should be optimized for a screen size of 1600x1200. |
| 1800x1440 (Optimize for 1800x1440) | Specifies that web pages produced from this document should be optimized for a screen size of 1800x1440. |
| 1920x1200 (Optimize for 1920x1200) | Specifies that web pages produced from this document should be optimized for a screen size of 1920x1200. |
| 544x376 (Optimize for 544x376) | Specifies that web pages produced from this document should be optimized for a screen size of 544x376. |
| 640x480 (Optimize for 640x480) | Specifies that web pages produced from this document should be optimized for a screen size of 640x480. |
| 720x512 (Optimize for 720x512) | Specifies that web pages produced from this document should be optimized for a screen size of 720x512. |
| 800x600 (Optimize for 800x600) | Specifies that web pages produced from this document should be optimized for a screen size of 800x600. |

### ST\_TblLayoutType (Table Layout Type)

This simple type defines the possible types of layout algorithms which can be used to lay out a table within a WordprocessingML document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| autofit (AutoFit Table Layout) | Specifies that this table shall use an AutoFit table layout algorithm. |
| fixed (Fixed Width Table Layout) | Specifies that this table shall use the fixed width table layout algorithm described above. |

### ST\_TblOverlap (Table Overlap Setting)

This simple type contains the possible settings for a floating table which shall be used to determine if the table can overlap with other floating tables when displayed in the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| never (Floating Table Cannot Overlap) | Specifies that the parent table, if floating, shall never be displayed in a state where it would be overlapping another floating table in the document. |
| overlap (Floating Table Can Overlap) | Specifies that the parent table, if floating, can be displayed in a state where it would be overlapping another floating table in the document. |

### ST\_TblStyleOverrideType (Conditional Table Style Formatting Types)

This simple type specifies possible values for the sections of the table to which the current conditional formatting properties shall be applied when this table style is used.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| band1Horz (Banded Row Conditional Formatting) | Specifies that the table formatting applies to odd numbered groupings of rows. |
| band1Vert (Banded Column Conditional Formatting) | Specifies that the table formatting applies to odd numbered groupings of columns. |
| band2Horz (Even Row Stripe Conditional Formatting) | Specifies that the table formatting applies to even numbered groupings of rows. |
| band2Vert (Even Column Stripe Conditional Formatting) | Specifies that the table formatting applies to even numbered groupings of columns. |
| firstCol (First Column Conditional Formatting) | Specifies that the table formatting applies to the first column. |
| firstRow (First Row Conditional Formatting) | Specifies that the table formatting applies to the first row. |
| lastCol (Last table column formatting) | Specifies that the table formatting applies to the last column. |
| lastRow (Last table row formatting) | Specifies that the table formatting applies to the last row. |
| neCell (Top Right table cell formatting) | Specifies that the table formatting applies to the top Right cell. |
| nwCell (Top left table cell formatting) | Specifies that the table formatting applies to the top left cell. |
| seCell (Bottom Right table cell formatting) | Specifies that the table formatting applies to the bottom Right cell. |
| swCell (Bottom left table cell formatting) | Specifies that the table formatting applies to the bottom left cell. |
| wholeTable (Whole table formatting) | Specifies that the conditional formatting applies to the whole table. |

### ST\_TblWidth (Table Width Units)

This simple type specifies the possible values for the units of the width property being defined by a specific table width property. These properties are used to define various properties of a table, including: cell spacing, preferred width, and table margins.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| auto (Automatically Determined Width) | Specifies that the value for the measurement of the current table width property in the parent table shall be automatically determined by the table layout algorithm when the table is displayed (this width can be adjusted as appropriate). |
| dxa (Width in Twentieths of a Point) | Specifies that the value for the measurement of the current table width property in the parent table shall be interpreted as twentieths of a point (1/1440 of an inch). |
| nil (No Width) | Specifies that the current width is zero, regardless of any width value specified on the parent element. |
| pct (Width in Percent of Table Width) | Specifies that the value for the measurement of the current table width property in the parent table shall be interpreted as whole percentage point when a percent sign (U+0025) is present. |

### ST\_TextAlignment (Vertical Text Alignment Types)

This simple type specifies the type of vertical alignment which shall be used to align the characters on each line in the parent object.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| auto (Automatically Determine Alignment) | Specifies that all text in the parent object shall be aligned automatically when displayed. |
| baseline (Align Text at Baseline) | Specifies that all text in the parent object shall be aligned to the baseline of each character when displayed. |
| bottom (Align Text at Bottom) | Specifies that all text in the parent object shall be aligned to the bottom of each character when displayed. |
| center (Align Text at Center) | Specifies that all text in the parent object shall be aligned to the center of each character when displayed. |
| top (Align Text at Top) | Specifies that all text in the parent object shall be aligned to the top of each character when displayed. |

### ST\_TextboxTightWrap (Lines To Tight Wrap Within Text Box)

This simple type specifies the lines in the parent paragraph which shall allow the text to be tight wrapped to the paragraph (and not the containing text box) extents when displaying the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| allLines (Tight Wrap All Lines) | Specifies that all lines in the paragraph shall allow surrounding text to be tight wrapped to their extents and not the containing text box’s extents. |
| firstAndLastLine (Tight Wrap First and Last Lines) | Specifies that only the first and last lines in the paragraph shall allow surrounding text to be tight wrapped to their extents and not the containing text box’s extents. |
| firstLineOnly (Tight Wrap First Line) | Specifies that only the first line in the paragraph shall allow surrounding text to be tight wrapped to their extents and not the containing text box’s extents. |
| lastLineOnly (Tight Wrap Last Line) | Specifies that only the last line in the paragraph shall allow surrounding text to be tight wrapped to their extents and not the containing text box’s extents. |
| none (Do Not Tight Wrap) | Specifies that no lines in the paragraph shall allow surrounding text to be tight wrapped to their extents and not the containing text box’s extents. |

### ST\_TextDirection (Text Flow Direction)

This simple type specifies the direction of the text flow for the parent object.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| lr (Lines Flow From Left to Right) | Specifies that text in the parent object shall be oriented vertically, flowing from left to Right |
| lrV (Lines Flow From Left to Right Rotated) | Specifies that text in the parent object shall be oriented vertically, flowing from left to Right horizontally on the page. |
| rl (Lines Flow From Right to Left) | Specifies that text in the parent object shall be oriented vertically, flowing from Right to left horizontally on the page, as if the text were rotated 90 degrees. |
| rlV (Lines Flow From Right to Left Rotated) | Specifies that text in the parent object shall be oriented vertically, flowing from Right to left horizontally on the page. |
| tb (Lines Flow From Top to Bottom) | Specifies that text in the parent object shall be oriented horizontally, flowing from top to bottom vertically on the page. |
| tbV (Lines Flow From Top to Bottom Rotated) | Specifies that text in the parent object shall be oriented horizontally, flowing from top to bottom vertically on the page. |

### ST\_TextEffect (Animated Text Effects)

This simple type specifies the possible types of animated text effect which can be applied to a text run when it is displayed..

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| antsBlack (Black Dashed Line Animation) | Specifies that this text shall be surrounded by an animated black dashed line border. |
| antsRed (Marching Red Ants) | Specifies that this text shall be surrounded by an animated red dashed line border. |
| blinkBackground (Blinking Background Animation) | Specifies that this text shall be surrounded by a background color which alternates between black and white. |
| lights (Colored Lights Animation) | Specifies that this text shall be surrounded by a border consisting of a series of colored lights, which constantly change colors in sequence. |
| none (No Animation) | Specifies that this text shall have no animated text effect. |
| shimmer (Shimmer Animation) | Specifies that this text shall be animated by alternating |
| sparkle (Sparkling Lights Animation) | Specifies that this text shall have a background consisting of a random pattern of colored lights, which constantly change colors in sequence. |

### ST\_TextScale (Text Expansion/Compression Percentage)

This simple type specifies that the percentage by which the contents of a run shall be expanded or compressed with respect to its normal (100%) character width, with a minimum width of 1% and maximum width of 600%.

### ST\_Theme (Theme Font)

This simple type specifies a theme font type which can be referenced as a theme font within the parent run properties. This theme font is a reference to one of the predefined theme fonts, located in the document's Theme part,which allows for font information to be set centrally in the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| majorAscii (Major ASCII Theme Font) | Specifies that the current font is a reference to the major theme font for the range of characters from U+0000–U+007F. |
| majorBidi (Major Complex Script Theme Font) | Specifies that the current font is a reference to the major theme font for the Complex Script range. |
| majorEastAsia (Major East Asian Theme Font) | Specifies that the current font is a reference to the major theme font for the East Asian range. |
| majorHAnsi (Major High ANSI Theme Font) | Specifies that the current font is a reference to the major theme font for the High ANSI range. |
| minorAscii (Minor ASCII Theme Font) | Specifies that the current font is a reference to the minor theme font for the range of characters from U+0000–U+007F. |
| minorBidi (Minor Complex Script Theme Font) | Specifies that the current font is a reference to the minor theme font for the Complex Script range. |
| minorEastAsia (Minor East Asian Theme Font) | Specifies that the current font is a reference to the minor theme font for the East Asian range. |
| minorHAnsi (Minor High ANSI Theme Font) | Specifies that the current font is a reference to the minor theme font for the High ANSI range. |

### ST\_ThemeColor (Theme Color)

This simple type specifies a theme color to be applied to the current object. The specified theme color is a reference to one of the predefined theme colors, located in the document's Theme part, which allows color information to be set centrally in the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| accent1 (Accent 1 Theme Color) | Specifies that the color to be used shall be the theme color specified by the accent1 attribute of the clrSchemeMapping element (§17.15.1.20). |
| accent2 (Accent 2 Theme Color) | Specifies that the color to be used shall be the theme color specified by the accent2 attribute of the clrSchemeMapping element (§17.15.1.20). |
| accent3 (Accent 3 Theme Color) | Specifies that the color to be used shall be the theme color specified by the accent3 attribute of the clrSchemeMapping element (§17.15.1.20). |
| accent4 (Accent 4 Theme Color) | Specifies that the color to be used shall be the theme color specified by the accent4 attribute of the clrSchemeMapping element (§17.15.1.20). |
| accent5 (Accent 5 Theme Color) | Specifies that the color to be used shall be the theme color specified by the accent5 attribute of the clrSchemeMapping element (§17.15.1.20). |
| accent6 (Accent 6 Theme Color) | Specifies that the color to be used shall be the theme color specified by the accent6 attribute of the clrSchemeMapping element (§17.15.1.20). |
| background1 (Background 1 Theme Color) | Specifies that the color to be used shall be the theme color specified by the bg1 attribute of the clrSchemeMapping element (§17.15.1.20). |
| background2 (Background 2 Theme Color) | Specifies that the color to be used shall be the theme color specified by the bg2 attribute of the clrSchemeMapping element (§17.15.1.20). |
| dark1 (Dark 1 Theme Color) | Specifies that the color to be used shall be the theme color specified by the t1 attribute of the clrSchemeMapping element (§17.15.1.20). |
| dark2 (Dark 2 Theme Color) | Specifies that the color to be used shall be the theme color specified by the t2 attribute of the clrSchemeMapping element (§17.15.1.20). |
| followedHyperlink (Followed Hyperlink Theme Color) | Specifies that the color to be used shall be the theme color specified by the followedHyperlink attribute of the clrSchemeMapping element (§17.15.1.20). |
| hyperlink (Hyperlink Theme Color) | Specifies that the color to be used shall be the theme color specified by the hyperlink attribute of the clrSchemeMapping element (§17.15.1.20). |
| light1 (Light 1 Theme Color)light2 (Light 2 Theme Color) | Specifies that the color to be used shall be the theme color specified by the bg1 attribute of the clrSchemeMapping element (§17.15.1.20). |
| none (No Theme Color) | Specifies that no theme color shall be applied to the current object. |
| text1 (Text 1 Theme Color) | Specifies that the color to be used shall be the theme color specified by the t1 attribute of the clrSchemeMapping element (§17.15.1.20). |
| text2 (Text 2 Theme Color) | Specifies that the color to be used shall be the theme color specified by the t2 attribute of the clrSchemeMapping element (§17.15.1.20). |

### ST\_UcharHexNumber (Two Digit Hexadecimal Value)

This simple type specifies a number value specified as a one octet (two digit) hexadecimal number, whose contents are interpreted based on the context of the parent XML element.

### ST\_Underline (Underline Patterns)

This simple type specifies the types of patterns which can be used to create the underline applied beneath the text in a run.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| dash (Dashed Underline) | Specifies an underline consisting of a dashed line beneath all characters in this run. |
| dashDotDotHeavy (Thick Dash-Dot-Dot Underline) | Specifies an underline consisting of a series of thick dash, dot, dot characters beneath all characters in this run. |
| dashDotHeavy (Thick Dash-Dot Underline) | Specifies an underline consisting of a series of thick dash, dot characters beneath all characters in this run. |
| dashedHeavy (Thick Dashed Underline) | Specifies an underline consisting of a series of thick dashes beneath all characters in this run. |
| dashLong (Long Dashed Underline) | Specifies an underline consisting of long dashed characters beneath all characters in this run. |
| dashLongHeavy (Thick Long Dashed Underline) | Specifies an underline consisting of thick long dashed characters beneath all characters in this run. |
| dotDash (Dash-Dot Underline) | Specifies an underline consisting of a series of dash, dot characters beneath all characters in this run. |
| dotDotDash (Dash-Dot-Dot Underline) | Specifies an underline consisting of a series of dash, dot, dot characters beneath all characters in this run. |
| dotted (Dotted Underline) | Specifies an underline consisting of a series of dot characters beneath all characters in this run. |
| dottedHeavy (Thick Dotted Underline) | Specifies an underline consisting of a series of thick dot characters beneath all characters in this run. |
| double (Double Underline) | Specifies an underline consisting of two lines beneath all characters in this run. |
| none (No Underline) | Specifies no underline beneath this run. |
| single (Single Underline) | Specifies an underline consisting of a single line beneath all characters in this run. |
| thick (Thick Underline) | Specifies an underline consisting of a single thick line beneath all characters in this run. |
| wave (Wave Underline) | Specifies an underline consisting of a single wavy line beneath all characters in this run. |
| wavyDouble (Double Wave Underline) | Specifies an underline consisting of a pair of wavy lines |
| wavyHeavy (Heavy Wave Underline) | Specifies an underline consisting of a single thick wavy line beneath all characters in this run. |
| words (Underline Non-Space Characters Only) | Specifies an underline consisting of a single line beneath all non-space characters in the run. There shall be no underline beneath any space character (breaking or non-breaking). |

### ST\_VAnchor (Vertical Anchor Location)

This simple type specifies the vertical position to which the parent object has been anchored in the document. This anchor position shall be used as the base location to determine the final vertical position of the object in the document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| margin (Relative To Margin) | Specifies that the parent object shall be vertically anchored to the text margins. |
| page (Relative To Page) | Specifies that the parent object shall be vertically anchored to the page edge. |
| text (Relative To Vertical Text Extents) | Specifies that the parent object shall be vertically anchored to the text extents. |

### ST\_VerticalJc (Vertical Alignment Type)

This simple type specifies the vertical alignment for text between the top and bottom margins of the parent container (page or table cell).

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| both (Vertical Justification) | Specifies that the text shall be vertically justified between the top and bottom margins of the parent object, by adding additional line spacing to each paragraph as required. |
| bottom (Align Bottom) | Specifies that the text shall be vertically aligned to the bottom margin of the parent object, by moving all text to the bottom text extent within the parent object as required. |
| center (Align Center) | Specifies that the text shall be vertically aligned to the center of the parent object.. |
| top (Align Top) | Specifies that the text shall be vertically aligned to the top margin of the parent object, by moving all text to the top text extent within the parent object as required. |

### ST\_View (Document View Values)

This simple type defines the kinds of view available to an application when rendering a WordprocessingML document. Those view kinds are, as follows: *default view*, *draft view*, *outline view*, *print layout view*, and *web page view*.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| masterPages (Master Document View) | Specifies that a given WordprocessingML document should be rendered in a manner that allows a |
| none (Default View) | Specifies that a given WordprocessingML document should be rendered in the default view of the application. |
| normal (Draft View) | Specifies that a given WordprocessingML document should be rendered in a manner that allows a |
| outline (Outline View) | Specifies that a given WordprocessingML document should be rendered in a manner that allows a |
| print (Print Layout View) | Specifies that a given WordprocessingML document should be rendered in a view mimicking the way that document would be printed. |
| web (Web Page View) | Specifies that a given WordprocessingML document should be rendered in a view mimicking the way that document would be displayed as a web page. |

### ST\_WmlColorSchemeIndex (Theme Color Reference)

This simple type specifies the possible set of theme color stored in the document's Theme part which can be referenced by document content. This reference is used to map the use of the theme colors in the ST\_ThemeColor enumeration to the theme colors in the theme part.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| accent1 (Accent 1 Theme Color Reference) | Specifies a reference to the accent1 theme color in the document's Theme part. |
| accent2 (Accent 2 Theme Color Reference) | Specifies a reference to the accent2 theme color in the document's Theme part. |
| accent3 (Accent 3 Theme Color Reference) | Specifies a reference to the accent3 theme color in the document's Theme part. |
| accent4 (Accent4 Theme Color Reference) | Specifies a reference to the accent4 theme color in the document's Theme part. |
| accent5 (Accent5 Theme Color Reference) | Specifies a reference to the accent5 theme color in the document's Theme part. |
| accent6 (Accent 6 Theme Color Reference) | Specifies a reference to the accent6 theme color in the document's Theme part. |
| dark1 (Dark 1 Theme Color Reference) | Specifies a reference to the dk1 theme color in the document's Theme part. |
| dark2 (Dark 2 Theme Color Reference) | Specifies a reference to the dk2 theme color in the document's Theme part. |
| followedHyperlink (Followed Hyperlink Theme Color Reference) | Specifies a reference to the folHlink theme color in the document's Theme part. |
| hyperlink (Hyperlink Theme Color Reference) | Specifies a reference to the hlink theme color in the document's Theme part. |
| light1 (Light 1 Theme Color Reference) | Specifies a reference to the lt1 theme color in the document's Theme part. |
| light2 (Light 2 Theme Color Reference) | Specifies a reference to the lt2 theme color in the document's Theme part. |

### ST\_Wrap (Text Wrapping around Text Frame Type)

This simple type specifies the type of text wrapping which shall be allowed around a text frame within a document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| around (Allow Text Wrapping Around Frame) | Specifies that text shall be allowed to wrap around the remaining space on each line around this text frame in the document. |
| auto (Default Text Wrapping Around Frame) | Specifies that text shall have the default application-defined behavior of the application displaying the WordprocessingML document with regard to the text wrapping displayed around the frame. |
| none (No Text Wrapping Around Frame) | Specifies that text shall not be allowed to wrap around the remaining space on each lines around this text frame. |
| notBeside (No Text Wrapping Beside Frame) | Specifies that text shall not be allowed to wrap around the remaining space on each lines around this text frame. |
| through (Through Text Wrapping Around Frame)tight (Tight Text Wrapping Around Frame) | Specifies that text shall be allowed to wrap around the remaining space on each line around this text frame in the document. |

### ST\_Zoom (Magnification Preset Values)

This simple type specifies the type of magnification settings which can be applied to a given document on open.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bestFit (Display Page Width) | Specifies that the magnification setting shall be adjusted to ensure the width of the current page matches the available window width. |
| fullPage (Display One Full Page) | Specifies that the magnification setting shall be adjusted to ensure that one full page can be seen at a time. |
| none (No Preset Magnification) | Specifies that no preset magnification is present, and the last known cached setting shall be used. |
| textFit (Display Text Width) | Specifies that the magnification setting shall be adjusted to ensure the width of the text extents on the current page matches the available window width. |

### ST\_TextScalePercent (Text Expansion/Compression Percentage)

This simple type specifies that the percentage by which the contents of a run shall be expanded or compressed with respect to its normal (100%) character width, with a minimum width of 1% and maximum width of 600%. [*Example*: Consider a run of text that must be compressed by half when displaying each character within the contents of the run. This constraint is specified using the following WordprocessingML:

### ST\_MeasurementOrPercent (Measurement or Percentage Value)

This simple type specifies the possible values for a table measurement, which can be percentage-based or absolute. See the union’s member types for details.

# DrawingML - Framework Reference Material

[*Note*: For further information on the mapping of elements and attributes to OPC parts, see the Bibliography entry, “Information on elements, attributes, and OPC parts in ISO/IEC 29500 (OOXML)”. *end note*]

## DrawingML - Main

The DrawingML Main namespace defines all of the base constructs for all kinds of DrawingML objects (charts, diagrams, shapes, pictures, and so on). These constructs and primitives are defined below.

### Basics

This section describes all the basic common elements associated with the DrawingML framework.

#### EMU Unit of Measurement

Throughout ECMA-376, the EMU is used as a unit of measurement for length. An *EMU* is defined as follows:

#### Core Drawing Object Information

Within DrawingML, there is the notion of core drawing elements. These are elements that both are vital to and common across the DrawingML framework. These elements denote the most integral pieces of the DrawingML document structure and thus are among the most widely used.

##### bldChart (Build Chart)

This element specifies how to build the animation for a diagram.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| animBg (Animate Background) | Specifies whether or not the chart background elements should be animated as well. |
| bld (Build) | Specifies how the chart is built. The animation animates the sub-elements in the container in the particular order defined by this attribute. |

##### bldDgm (Build Diagram)

This element specifies how to build the animation for a diagram.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bld (Build) | Specifies how the chart is built. The animation animates the sub-elements in the container in the particular order defined by this attribute. |
| rev (Reverse Animation) | Specifies whether the animation of the objects in this diagram should be reversed or not. If this attribute is not specified, a value of false is assumed. |

##### chart (Chart to Animate)

This element specifies a reference to a chart that should be animated within a sequence of slide animations. In addition to simply acting as a reference to a chart there is also animation build steps defined.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bldStep (Animation Build Step) | Specifies which step this part of the chart should be built using. For instance the chart can be built as one object meaning it is animated as a single graphic. Alternatively the chart can be animated, or built as separate pieces. |
| categoryIdx (Category Index) | Specifies the index of the category within the corresponding chart that should be animated. |
| seriesIdx (Series Index) | Specifies the index of the series within the corresponding chart that should be animated. |

##### cNvCxnSpPr (Non-Visual Connector Shape Drawing Properties)

This element specifies the non-visual drawing properties for a connector shape. These non-visual properties are properties that the generating application would utilize when rendering the slide surface.

##### cNvGraphicFramePr (Non-Visual Graphic Frame Drawing Properties)

This element specifies the non-visual drawing properties for a graphic frame. These non-visual properties are properties that the generating application would utilize when rendering the slide surface.

##### cNvGrpSpPr (Non-Visual Group Shape Drawing Properties)

This element specifies the non-visual drawing properties for a group shape. These non-visual properties are properties that the generating application would utilize when rendering the slide surface.

##### cNvPicPr (Non-Visual Picture Drawing Properties)

This element specifies the non-visual properties for the picture canvas. These properties are to be used by the generating application to determine how certain properties are to be changed for the picture object in question.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| preferRelativeResi ze (Relative Resize | Specifies if the user interface should show the resizing of the picture based on the picture's current size or its original size. If this attribute is set to true, then scaling is relative to the original picture size as opposed to the current picture size. |

##### cNvPr (Non-Visual Drawing Properties)

This element specifies non-visual canvas properties. This allows for additional information that does not affect the appearance of the picture to be stored.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| descr (Alternative Text for Object) | Specifies alternative text for the current DrawingML object, for use by assistive technologies or applications which do not display the current object. |
| hidden (Hidden) | Specifies whether this DrawingML object is displayed. When a DrawingML object is displayed within a document, that object can be hidden (i.e., present, but not visible). |
| id (Unique Identifier) | Specifies a unique identifier for the current DrawingML object within the current document. This ID can be used to assist in uniquely identifying this object so that it can be referred to by other parts of the document. |
| name (Name) | Specifies the name of the object. [*Note*: Typically, this is used to store the original file name of a picture object. *end note*] |
| title (Title) | Specifies the title (caption) of the current DrawingML object. |

##### cNvSpPr (Non-Visual Shape Drawing Properties)

This element specifies the non-visual drawing properties for a shape. These properties are to be used by the generating application to determine how the shape should be dealt with

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| txBox (Text Box) | Specifies that the corresponding shape is a text box and thus should be treated as such by the generating application. If this attribute is omitted then it is assumed that the corresponding shape is not specifically a text box. |

##### cxnSp (Connection Shape)

This element specifies a connection shape that is used to connect two sp elements. Once a connection is specified using a cxnSp, it is left to the generating application to determine the exact path the connector takes. That is the connector routing algorithm is left up to the generating application as the desired path might be different depending on the specific needs of the application.

##### cxnSpLocks (Connection Shape Locks)

This element specifies all locking properties for a connection shape. These properties inform the generating application about specific properties that have been previously locked and thus should not be changed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| noAdjustHandles (Disallow Showing | Specifies that the generating application should not show adjust handles for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeArrowhe | Specifies that the generating application should not allow arrowhead changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeAspect | Specifies that the generating application should not allow aspect ratio changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeShapeTy pe (Disallow Shape | Specifies that the generating application should not allow shape type changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noEditPoints (Disallow Shape | Specifies that the generating application should not allow shape point changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noGrp (Disallow Shape Grouping) | Specifies that the generating application should not allow shape grouping for the corresponding connection shape. That is it cannot be combined within other shapes to form a group of shapes. If this attribute is not specified, then a value of false is assumed. |
| noMove (Disallow Shape Movement) | Specifies that the generating application should not allow position changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noResize (Disallow Shape Resize) | Specifies that the generating application should not allow size changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noRot (Disallow Shape Rotation) | Specifies that the generating application should not allow shape rotation changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noSelect (Disallow Shape Selection) | Specifies that the generating application should not allow selecting of the corresponding connection shape. That means also that no picture, shapes or text attached to this connection shape can be selected if this attribute has been specified. If this attribute is not specified, then a value of false is assumed. |

##### dgm (Diagram to Animate)

This element specifies a reference to a diagram that should be animated within a sequence of slide animations. In addition to simply acting as a reference to a diagram there is also animation build steps defined.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bldStep (Animation Build Step) | Specifies which step this part of the diagram should be built using. For instance the diagram can be built as one object meaning it is animated as a single graphic. Alternatively the diagram can be animated, or built as separate pieces. |
| id (Identifier) | Specifies the GUID of the shape for this build step in the animation. |

##### endCxn (Connection End)

This element specifies the ending connection that should be made by the corresponding connector shape. This connects the end tail of the connector to the final destination shape.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Identifier) | Specifies the id of the shape to make the final connection to. |
| idx (Index) | Specifies the index into the connection site table of the final connection shape. That is there are many connection sites on a shape and it shall be specified which connection site the corresponding connector shape should connect to. |

##### ext (Extension)

This element specifies an extension that is used for future extensions to the current version of DrawingML. This allows for the specifying of currently unknown elements in the future that is used for later versions of generating applications.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| uri (Uniform Resource Identifier) | Specifies the URI, or uniform resource identifier that represents the data stored under this tag. The URI is used to identify the correct 'server' that can process the contents of this tag. |

##### extLst (Extension List)

This element specifies the extension list within which all future extensions of element type ext is defined. The extension list along with corresponding future extensions is used to extend the storage capabilities of the DrawingML framework. This allows for various new types of data to be stored natively within the framework.

##### graphic (Graphic Object)

This element specifies the existence of a single graphic object. Document authors should refer to this element when they wish to persist a graphical object of some kind. The specification for this graphical object is provided entirely by the document author and referenced within the graphicData child element.

##### graphicData (Graphic Object Data)

This element specifies the reference to a graphic object within the document. This graphic object is provided entirely by the document authors who choose to persist this data within the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| uri (Uniform Resource Identifier) | Specifies the URI, or uniform resource identifier that represents the data stored under this tag. The URI is used to identify the correct 'server' that can process the contents of this tag. |

##### graphicFrame (Graphic Frame)

This element specifies the existence of a graphics frame. This frame contains a graphic that was generated by an external source and needs a container in which to be displayed on the slide surface.

##### graphicFrameLocks (Graphic Frame Locks)

This element specifies all locking properties for a graphic frame. These properties inform the generating application about specific properties that have been previously locked and thus should not be changed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| noChangeAspect | Specifies that the generating application should not allow aspect ratio changes for the corresponding graphic frame. If this attribute is not specified, then a value of false is assumed. |
| noDrilldown | Specifies that the generating application should not allow selecting of objects within the corresponding graphic frame but allow selecting of the graphic frame itself. If this attribute is not specified, then a value of false is assumed. |
| noGrp (Disallow Shape Grouping) | Specifies that the generating application should not allow shape grouping for the corresponding graphic frame. That is it cannot be combined within other shapes to form a group of shapes. If this attribute is not specified, then a value of false is assumed. |
| noMove (Disallow Shape Movement) | Specifies that the corresponding graphic frame cannot be moved. Objects that reside within the graphic frame can still be moved unless they also have been locked. If this attribute is not specified, then a value of false is assumed. |
| noResize (Disallow Shape Resize) | Specifies that the generating application should not allow size changes for the corresponding graphic frame. If this attribute is not specified, then a value of false is assumed. |
| noSelect (Disallow Shape Selection) | Specifies that the generating application should not allow selecting of the corresponding picture. That means also that no picture, shapes or text attached to this picture can be selected if this attribute has been specified. If this attribute is not specified, then a value of false is assumed. |

##### grpSp (Group shape)

This element specifies a group shape that represents many shapes grouped together. This shape is to be treated just as if it were a regular shape but instead of being described by a single geometry it is made up of all the shape geometries encompassed within it. Within a group shape each of the shapes that make up the group are specified just as they normally would. The idea behind grouping elements however is that a single transform can apply to many shapes at the same time.

##### grpSpLocks (Group Shape Locks)

This element specifies all locking properties for a connection shape. These properties inform the generating application about specific properties that have been previously locked and thus should not be changed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| noChangeAspect | Specifies that the generating application should not allow aspect ratio changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noGrp (Disallow Shape Grouping) | Specifies that the corresponding group shape cannot be grouped. That is it cannot be combined within other shapes to form a group of shapes. If this attribute is not specified, then a value of false is assumed. |
| noMove (Disallow Moving Shape) | Specifies that the corresponding graphic frame cannot be moved. Objects that reside within the graphic frame can still be moved unless they also have been locked. If this attribute is not specified, then a value of false is assumed. |
| noResize (Disallow Shape Resizing) | Specifies that the corresponding group shape cannot be resized. If this attribute is not specified, then a value of false is assumed. |
| noRot (Disallow Shape Rotation) | Specifies that the corresponding group shape cannot be rotated Objects that reside within the group can still be rotated unless they also have been locked. If this attribute is not specified, then a value of false is assumed. |
| noSelect (Disallow Shape Selection) | Specifies that the corresponding group shape cannot have any part of it be selected. That means that no picture, shapes or attached text can be selected either if this attribute has been specified. If this attribute is not specified, then a value of false is assumed. |
| noUngrp (Disallow Shape Ungrouping) | Specifies that the generating application should not show adjust handles for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |

##### grpSpPr (Visual Group Shape Properties)

This element specifies the properties that are to be common across all of the shapes within the corresponding group. If there are any conflicting properties within the group shape properties and the individual shape properties then the individual shape properties should take precedence.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and White Mode) | Specifies that the group shape should be rendered using only black and white coloring. That is the coloring information for the group shape should be converted to either black or white when rendering the corresponding shapes. |

##### hlinkHover (Hyperlink for Hover)

This element specifies the hyperlink information to be activated when the user's mouse is hovered over the corresponding object. The operation of the hyperlink is to have the specified action be activated when the mouse of the user hovers over the object. When this action is activated then additional attributes can be used to specify other tasks that should be performed along with the action.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| action (Action Setting) | Specifies an action that is to be taken when this hyperlink is activated. This can be used to specify a slide to be navigated to or a script of code to be run. |
| endSnd (End Sounds) | Specifies if the URL in question should stop all sounds that are playing when it is clicked. |
| highlightClick | Specifies if this attribute has already been used within this document. That is when a hyperlink has already been visited that this attribute would be utilized so the generating application can determine the color of this text. If this attribute is omitted, then a value of 0 or false is implied. |
| history (Add Hyperlink to Page | Specifies whether to add this URI to the history when navigating to it. This allows for the viewing of this presentation without the storing of history information on the viewing machine. If this attribute is omitted, then a value of 1 or true is assumed. |
| id (Drawing Object | Specifies the relationship id that when looked up in this slides relationship file contains the target of this hyperlink. This attribute cannot be omitted. |
| invalidUrl (Invalid URL) | Specifies the URL when it has been determined by the generating application that the URL is invalid. That is the generating application can still store the URL but it is known that this URL is not correct. |
| tgtFrame (Target Frame) | Specifies the target frame that is to be used when opening this hyperlink. When the hyperlink is activated this attribute is used to determine if a new window is launched for viewing or if an existing one can be used. If this attribute is omitted, than a new window is opened. |
| tooltip (Hyperlink Tooltip) | Specifies the tooltip that should be displayed when the hyperlink text is hovered over with the mouse. If this attribute is omitted, than the hyperlink text itself can be displayed. |

##### ln (Outline)

This element specifies an outline style that can be applied to a number of different objects such as shapes and text. The line allows for the specifying of many different types of outlines including even line dashes and bevels.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Stroke Alignment) | Specifies the alignment to be used for the underline stroke. |
| cap (Line Ending Cap Type) | Specifies the ending caps that should be used for this line. [*Note*: Examples of cap types are rounded, flat, etc. *end note*] If this attribute is omitted, than a value of square is assumed. |
| cmpd (Compound | Specifies the compound line type to be used for the underline stroke. If this attribute is omitted, then a value of sng is assumed. |
| w (Line Width) | Specifies the width to be used for the underline stroke. If this attribute is omitted, then a value of 0 is assumed. |

##### nvCxnSpPr (Non-Visual Properties for a Connection Shape)

This element specifies all non-visual properties for a connection shape. This element is a container for the nonvisual identification properties, shape properties and application properties that are to be associated with a connection shape. This allows for additional information that does not affect the appearance of the connection shape to be stored.

##### nvGraphicFramePr (Non-Visual Properties for a Graphic Frame)

This element specifies all non-visual properties for a graphic frame. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a graphic frame. This allows for additional information that does not affect the appearance of the graphic frame to be stored.

##### nvGrpSpPr (Non-Visual Properties for a Group Shape)

This element specifies all non-visual properties for a group shape. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a group shape. This allows for additional information that does not affect the appearance of the group shape to be stored.

##### nvPicPr (Non-Visual Properties for a Picture)

This element specifies all non-visual properties for a picture. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a picture. This allows for additional information that does not affect the appearance of the picture to be stored.

##### nvSpPr (Non-Visual Properties for a Shape)

This element specifies all non-visual properties for a shape. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a shape. This allows for additional information that does not affect the appearance of the shape to be stored.

##### pic (Picture)

This element specifies the existence of a picture object within the document.

##### picLocks (Picture Locks)

This element specifies all locking properties for a graphic frame. These properties inform the generating application about specific properties that have been previously locked and thus should not be changed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| noAdjustHandles (Disallow Showing | Specifies that the generating application should not show adjust handles for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeArrowhe ads (Disallow | Specifies that the generating application should not allow arrowhead changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeAspect | Specifies that the generating application should not allow aspect ratio changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeShapeType (Disallow Shape | Specifies that the generating application should not allow shape type changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noCrop (Disallow Crop Changes) | Specifies that the generating application should not allow cropping for the corresponding picture. If this attribute is not specified, then a value of false is assumed. |
| noEditPoints (Disallow Shape | Specifies that the generating application should not allow shape point changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noGrp (Disallow Shape Grouping) | Specifies that the generating application should not allow shape grouping for the corresponding connection shape. That is it cannot be combined within other shapes to form a group of shapes. If this attribute is not specified, then a value of false is assumed. |
| noMove (Disallow Shape Movement) | Specifies that the generating application should not allow position changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noResize (Disallow Shape Resize) | Specifies that the generating application should not allow size changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noRot (Disallow Shape Rotation) | Specifies that the generating application should not allow shape rotation changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noSelect (Disallow Shape Selection) | Specifies that the generating application should not allow selecting of the corresponding connection shape. That means also that no picture, shapes or text attached to this connection shape can be selected if this attribute has been specified. If this attribute is not specified, then a value of false is assumed. |

##### snd (Hyperlink Sound)

This element specifies a sound to be played when a hyperlink within the document is activated. This sound is specified from within the parent hyperlink element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| embed (Embedded | Specifies the identification information for an embedded audio file. This attribute is used to specify the location of an object that resides locally within the file. [*Note*: A list of suggested audio types is provided in §15.2.2. *end note*] |
| name (Sound Name) | Specifies the original name or given short name for the corresponding sound. This is used to distinguish this sound from others by providing a human readable name for the attached sound should the user need to identify the sound among others within the UI. |

##### sp (Shape)

This element specifies the existence of a single shape. A shape can either be a preset or a custom geometry, defined using the DrawingML framework. In addition to a geometry each shape can have both visual and nonvisual properties attached. Text and corresponding styling information can also be attached to a shape. This shape is specified along with all other shapes within either the shape tree or group shape elements.

##### spLocks (Shape Locks)

This element specifies all locking properties for a shape. These properties inform the generating application about specific properties that have been previously locked and thus should not be changed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| noAdjustHandles (Disallow Showing | Specifies that the generating application should not show adjust handles for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeArrowhe | Specifies that the generating application should not allow arrowhead changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeAspect | Specifies that the generating application should not allow aspect ratio changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeShapeTy pe (Disallow Shape | Specifies that the generating application should not allow shape type changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noEditPoints (Disallow Shape | Specifies that the generating application should not allow shape point changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noGrp (Disallow Shape Grouping) | Specifies that the generating application should not allow shape grouping for the corresponding connection shape. That is it cannot be combined within other shapes to form a group of shapes. If this attribute is not specified, then a value of false is assumed. |
| noMove (Disallow Shape Movement) | Specifies that the generating application should not allow position changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noResize (Disallow Shape Resize) | Specifies that the generating application should not allow size changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noRot (Disallow Shape Rotation) | Specifies that the generating application should not allow shape rotation changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noSelect (Disallow Shape Selection) | Specifies that the generating application should not allow selecting of the corresponding connection shape. That means also that no picture, shapes or text attached to this connection shape can be selected if this attribute has been specified. If this attribute is not specified, then a value of false is assumed. |
| noTextEdit (Disallow Shape | Specifies that the generating application should not allow editing of the shape text for the corresponding shape. If this attribute is not specified, then a value of false is assumed. |

##### spPr (Shape Properties)

This element specifies the visual shape properties that can be applied to a shape.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and White Mode) | Specifies that the picture should be rendered using only black and white coloring. That is the coloring information for the picture should be converted to either black or white when rendering the picture. |

##### stCxn (Connection Start)

This element specifies the starting connection that should be made by the corresponding connector shape. This connects the head of the connector to the first shape.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Identifier) | Specifies the id of the shape to make the final connection to. |
| idx (Index) | Specifies the index into the connection site table of the final connection shape. That is there are many connection sites on a shape and it shall be specified which connection site the corresponding connector shape should connect to. |

##### style (Shape Style)

This element specifies the style information for a shape.

##### sx (Horizontal Ratio)

This element specifies the horizontal ratio for use within a scaling calculation.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| d (Denominator) | Specifies the denominator to be used within the equation. |
| n (Numerator) | Specifies the numerator to be used within the equation. |

##### sy (Vertical Ratio)

This element specifies the vertical ratio for use within a scaling calculation.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| d (Denominator) | Specifies the denominator to be used within the equation. |
| n (Numerator) | Specifies the numerator to be used within the equation. |

##### txBody (Shape Text Body)

This element specifies the existence of text to be contained within the corresponding shape. All visible text and visible text related properties are contained within this element. There can be multiple paragraphs and within paragraphs multiple runs of text.

##### txSp (Text Shape)

This element specifies the existence of a text shape within a parent shape. This text shape is specifically used for displaying text as it has only text related child elements.

##### useSpRect (Use Shape Text Rectangle)

This element specifies that the text rectangle from the parent shape should be used for this text shape. If this attribute is specified then the text rectangle, or text bounding box as it is also called should have the same dimensions as the text bounding box of the parent shape within which this text shape resides.

##### cpLocks (Content Part Locks)

This element specifies all locking properties for a content part. These properties inform the generating application about specific properties that have been previously locked and thus should not be changed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| noAdjustHandles (Disallow Showing | Specifies that the generating application should not show adjust handles for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeArrowhe | Specifies that the generating application should not allow arrowhead changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeAspect | Specifies that the generating application should not allow aspect ratio changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noChangeShapeTy pe (Disallow Shape | Specifies that the generating application should not allow shape type changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noEditPoints (Disallow Shape | Specifies that the generating application should not allow shape point changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noGrp (Disallow Shape Grouping) | Specifies that the generating application should not allow shape grouping for the corresponding connection shape. That is it cannot be combined within other shapes to form a group of shapes. If this attribute is not specified, then a value of false is assumed. |
| noMove (Disallow Shape Movement) | Specifies that the generating application should not allow position changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noResize (Disallow Shape Resize) | Specifies that the generating application should not allow size changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noRot (Disallow Shape Rotation) | Specifies that the generating application should not allow shape rotation changes for the corresponding connection shape. If this attribute is not specified, then a value of false is assumed. |
| noSelect (Disallow Shape Selection) | Specifies that the generating application should not allow selecting of the corresponding connection shape. That means also that no picture, shapes, or text attached to this connection shape can be selected if this attribute has been specified. If this attribute is not specified, then a value of false is assumed. |

#### Colors

Given its own section within DrawingML Basics, colors are an integral part of the DrawingML framework. Colors are used in virtually every object to help describe it's appearance when it is rendered on the screen. Since not every generating application wishes to represent color in the same manner, it is possible to specify color in a number of different ways.

##### alpha (Alpha)

This element specifies its input color with the specific opacity, but with its color unchanged.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the opacity as expressed by a percentage value. |

##### alphaMod (Alpha Modulation)

This element specifies a more or less opaque version of its input color. An alpha modulate never increases the alpha beyond 100%. A 200% alpha modulate makes an input color twice as opaque as before. A 50% alpha modulate makes an input color half as opaque as before.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the opacity as expressed by a percentage relative to the input color. |

##### alphaOff (Alpha Offset)

This element specifies a more or less opaque version of its input color. Increases or decreases the input alpha percentage by the specified percentage offset. A 10% alpha offset increases a 50% opacity to 60%. A -10% alpha offset decreases a 50% opacity to 40%. The transformed alpha values are limited to a range of 0 to 100%. A 10% alpha offset increase to a 100% opaque object still results in 100% opacity.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the opacity as expressed by a percentage offset increase or decrease to the input color. Increases never increase the opacity beyond 100%, decreases never decrease the opacity below 0%. |

##### blue (Blue)

This element specifies the input color with the specific blue component, but with the red and green color components unchanged.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value of the blue component. The assigned value is specified as a percentage with 0% indicating minimal blue and 100% indicating maximum blue. |

##### blueMod (Blue Modulation)

This element specifies the input color with its blue component modulated by the given percentage. A 50% blue modulate reduces the blue component by half. A 200% blue modulate doubles the blue component.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the blue component as expressed by a percentage relative to the input color component. Increases never increase the blue component beyond 100%, decreases never decrease the blue component below 0%. |

##### blueOff (Blue Offset)

This element specifies the input color with its blue component shifted, but with its red and green color components unchanged.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the blue component as expressed by a percentage offset increase or decrease to the input color component. Increases never increase the blue component beyond 100%, decreases never decrease the blue component below 0%. |

##### comp (Complement)

This element specifies that the color rendered should be the complement of its input color with the complement being defined as such. Two colors are called complementary if, when mixed they produce a shade of grey. For instance, the complement of red which is RGB (255, 0, 0) is cyan which is RGB (0, 255, 255).

##### gamma (Gamma)

This element specifies that the output color rendered by the generating application should be the sRGB gamma shift of the input color.

##### gray (Gray)

This element specifies a grayscale of its input color, taking into relative intensities of the red, green, and blue primaries.

##### green (Green)

This elements specifies the input color with the specified green component, but with its red and blue color components unchanged.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value of the green component. The assigned value is specified as a percentage with 0% indicating minimal green and 100% indicating maximum green. |

##### greenMod (Green Modulation)

This element specifies the input color with its green component modulated by the given percentage. A 50% green modulate reduces the green component by half. A 200% green modulate doubles the green component.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the green component as expressed by a percentage relative to the input color component. Increases never increase the green component beyond 100%, decreases never decrease the green component below 0%. |

##### greenOff (Green Offset)

This element specifies the input color with its green component shifted, but with its red and blue color components unchanged.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the green component as expressed by a percentage offset increase or decrease to the input color component. Increases never increase the green component beyond 100%, decreases never decrease the green component below 0%. |

##### hslClr (Hue, Saturation, Luminance Color Model)

This element specifies a color using the HSL color model. A perceptual gamma of 2.2 is assumed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| hue (Hue) | Specifies the angular value describing the wavelength. |
| lum (Luminance) | Specifies the luminance referring to the lightness or darkness of the color. Expressed as a percentage with 0% referring to maximal dark (black) and 100% referring to maximal white. |
| sat (Saturation) | Specifies the saturation referring to the purity of the hue. Expressed as a percentage with 0% referring to grey, 100% referring to the purest form of the hue. |

##### hue (Hue)

This element specifies the input color with the specified hue, but with its saturation and luminance unchanged.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the actual angle value to be used with the input color's hue component. |

##### hueMod (Hue Modulate)

This element specifies the input color with its hue modulated by the given percentage. A 50% hue modulate decreases the angular hue value by half. A 200% hue modulate doubles the angular hue value.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the hue as expressed by a percentage relative to the input color. |

##### hueOff (Hue Offset)

This element specifies the input color with its hue shifted, but with its saturation and luminance unchanged.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the actual angular value of the shift. The result of the shift shall be between 0 and 360 degrees. Shifts resulting in angular values less than 0 are treated as 0. Shifts resulting in angular values greater than 360 are treated as 360. |

##### inv (Inverse)

This element specifies the inverse of its input color.

##### invGamma (Inverse Gamma)

This element specifies that the output color rendered by the generating application should be the inverse sRGB gamma shift of the input color.

##### lum (Luminance)

This element specifies the input color with the specified luminance, but with its hue and saturation unchanged. Typically luminance values fall in the range [0%, 100%].

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value of the luminance. The assigned value is specified as a percentage with 0% indicating minimal luminance and 100% indicating maximum luminance. |

##### lumMod (Luminance Modulation)

This element specifies the input color with its luminance modulated by the given percentage. A 50% luminance modulate reduces the luminance by half. A 200% luminance modulate doubles the luminance.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the luminance as expressed by a percentage relative to the input color. Increases never increase the luminance beyond 100%, decreases never decrease the luminance below 0%. |

##### lumOff (Luminance Offset)

This element specifies the input color with its luminance shifted, but with its hue and saturation unchanged.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the luminance as expressed by a percentage offset increase or decrease to the input color. Increases never increase the luminance beyond 100%, decreases never decrease the luminance below 0%. |

##### prstClr (Preset Color)

This element specifies a color which is bound to one of a predefined collection of colors.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the actual preset color value. |

##### red (Red)

This element specifies the input color with the specified red component, but with its green and blue color components unchanged.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value of the red component. The assigned value is specified as a percentage with 0% indicating minimal red and 100% indicating maximum red. |

##### redMod (Red Modulation)

This element specifies the input color with its red component modulated by the given percentage. A 50% red modulate reduces the red component by half. A 200% red modulate doubles the red component.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the red component as expressed by a percentage relative to the input color component. Increases never increase the red component beyond 100%, decreases never decrease the red component below 0%. |

##### redOff (Red Offset)

This element specifies the input color with its red component shifted, but with its green and blue color components unchanged.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the red component as expressed by a percentage offset increase or decrease to the input color component. Increases never increase the red component beyond 100%, decreases never decrease the red component below 0%. |

##### sat (Saturation)

This element specifies the input color with the specified saturation, but with its hue and luminance unchanged. Typically saturation values fall in the range [0%, 100%].

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value of the saturation. The assigned value is specified as a percentage with 0% indicating minimal saturation and 100% indicating maximum saturation. |

##### satMod (Saturation Modulation)

This element specifies the input color with its saturation modulated by the given percentage. A 50% saturation modulate reduces the saturation by half. A 200% saturation modulate doubles the saturation.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the saturation as expressed by a percentage relative to the input color. Increases never increase the saturation beyond 100%, decreases never decrease the saturation below 0%. |

##### satOff (Saturation Offset)

This element specifies the input color with its saturation shifted, but with its hue and luminance unchanged. A 10% offset to 20% saturation yields 30% saturation.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the saturation as expressed by a percentage offset increase or decrease to the input color. Increases never increase the saturation beyond 100%, decreases never decrease the saturation below 0%. |

##### schemeClr (Scheme Color)

This element specifies a color bound to a user's theme. As with all elements which define a color, it is possible to apply a list of color transforms to the base color defined.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the desired scheme. |

##### scrgbClr (RGB Color Model - Percentage Variant)

This element specifies a color using the red, green, blue RGB color model. Each component, red, green, and blue is expressed as a percentage from 0% to 100%. A linear gamma of 1.0 is assumed.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| b (Blue) | Specifies the percentage of blue. |
| g (Green) | Specifies the percentage of green. |
| r (Red) | Specifies the percentage of red. |

##### shade (Shade)

This element specifies a darker version of its input color. A 10% shade is 10% of the input color combined with 90% black.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the shade as expressed by a percentage value. |

##### srgbClr (RGB Color Model - Hex Variant)

This element specifies a color using the red, green, blue RGB color model. Red, green, and blue is expressed as sequence of hex digits, RRGGBB. A perceptual gamma of 2.2 is used.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | The actual color value. Expressed as a sequence of hex digits RRGGBB. |

##### sysClr (System Color)

This element specifies a color bound to predefined operating system elements.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lastClr (Last Color) | Specifies the color value that was last computed by the generating application. |
| val (Value) | Specifies the system color value. |

##### tint (Tint)

This element specifies a lighter version of its input color. A 10% tint is 10% of the input color combined with 90% white.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the tint as expressed by a percentage value. |

### Audio and Video

The Audio and Video portion of the DrawingML framework deals with all media of these two kinds that can be attached to objects within a document. Types of audio that can be represented within a file are CD audio, QuickTime audio, and any other generic audio. When dealing with generic audio there is the option for embedding it within the file and also linking it. The linking option is preferable if the size of the audio file is too large and thus increases the size of the document by an undesirable amount. For video there are two kinds that can be represented and that is either a QuickTime movie or any other generic movie. When dealing with generic video there is only the option of linking to the media as video is too large to embed within a document.

#### audioCd (Audio from CD)

This element specifies the existence of Audio from a CD. This element is specified within the non-visual properties of an object. The audio shall be attached to an object as this is how it is represented within the document. The actual playing of the sound however is done within the timing node list that is specified under the timing element.

#### audioFile (Audio from File)

This element specifies the existence of an audio file. This element is specified within the non-visual properties of an object. The audio shall be attached to an object as this is how it is represented within the document. The actual playing of the audio however is done within the timing node list that is specified under the timing element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| contentType | Specifies the content type for the external file that is referenced by this element. Content types define a media type, a subtype, and an optional set of parameters, as defined in Part 2. If a rendering application cannot process external content of the content type specified, then the specified content can be ignored. [*Note*: A list of suggested audio types is provided in §15.2.2. *end note*] |
| link (Linked Relationship ID) | Specifies the identification information for a linked object. This attribute is used to specify the location of an object that does not reside within this file. |

#### end (Audio End Time)

This element specifies the end point for a CD Audio sound element. Encompassed within this element are the time and track at which the sound should halt its playback. This element is used in conjunction with an Audio Start Time element to specify the time span for an entire audioCD sound element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| time (Time) | Specifies the time in seconds that the CD Audio should be stopped at. If this attribute is omitted, then a value of 0 is assumed. |
| track (Track) | Specifies which track of the CD this Audio stops playing at. This attribute is required and cannot be omitted. |

#### quickTimeFile (QuickTime from File)

This element specifies the existence of a QuickTime file, as defined in the 2007-09-04 version of the QuickTime File Format Specification:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| link (Linked Relationship ID) | Specifies the identification information for a linked object. This attribute is used to specify the location of an object that does not reside within this file. |

#### st (Audio Start Time)

This element specifies the start point for a CD Audio sound element. Encompassed within this element are the time and track at which the sound should begin its playback. This element is used in conjunction with an Audio End Time element to specify the time span for an entire audioCD sound element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| time (Time) | Specifies the time in seconds that the CD Audio should be started at. If this attribute is omitted, then a value of 0 is assumed. |
| track (Track) | Specifies which track of the CD this Audio begins playing on. This attribute is required and cannot be omitted. |

#### videoFile (Video from File)

This element specifies the existence of a video file. This element is specified within the non-visual properties of an object. The video shall be attached to an object as this is how it is represented within the document. The actual playing of the video however is done within the timing node list that is specified under the timing element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| contentType | Specifies the content type for the external file that is referenced by this element. Content types define a media type, a subtype, and an optional set of parameters, as defined in Part 2. If a rendering application cannot process external content of the content type specified, then the specified content can be ignored. [*Note*: A list of suggested video types is provided in §15.2.17. *end note*] |
| link (Linked Relationship ID) | Specifies the identification information for a linked video file. This attribute is used to specify the location of an object that does not reside within this file. |

#### wavAudioFile (Audio from WAV File)

This element specifies the existence of an audio WAV file. This element is specified within the non-visual properties of an object. The audio shall be attached to an object as this is how it is represented within the document. The actual playing of the audio however is done within the timing node list that is specified under the timing element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| embed (Embedded | Specifies the identification information for an embedded audio file. This attribute is used to specify the location of an object that resides locally within the file. [*Note*: A list of suggested audio types is provided in §15.2.2. *end note*] |
| name (Sound Name) | Specifies the original name or given short name for the corresponding sound. This is used to distinguish this sound from others by providing a human readable name for the attached sound should the user need to identify the sound among others within the UI. |

### Styles

Styles within DrawingML refer to the way a particular object (be it text or a shape, or anything else) is formatted. Different aspects, ranging from color, line type, fill, and effects applied to the object can be predefined within a theme. The main purpose of a theme is to define a style matrix from which a document can pull style information from in order to format the visual look of objects in a document.

#### Styles

The elements in this section compose the basic definition of a style, including its associated colors, effect styles, line styles, fill styles, background styles, and font scheme.

##### accent1 (Accent 1)

This element defines a color that happens to be the accent 1 color. The set of twelve colors come together to form the color scheme for a theme.

##### accent2 (Accent 2)

This element defines a color that happens to be the accent 2 color. The set of twelve colors come together to form the color scheme for a theme.

##### accent3 (Accent 3)

This element defines a color that happens to be the accent 3 color. The set of twelve colors come together to form the color scheme for a theme.

##### accent4 (Accent 4)

This element defines a color that happens to be the accent 4 color. The set of twelve colors come together to form the color scheme for a theme.

##### accent5 (Accent 5)

This element defines a color that happens to be the accent 5 color. The set of twelve colors come together to form the color scheme for a theme.

##### accent6 (Accent 6)

This element defines a color that happens to be the accent 1 color. The set of twelve colors come together to form the color scheme for a theme.

##### bgFillStyleLst (Background Fill Style List)

This element defines a list of background fills that are used within a theme. The background fills consist of three fills, arranged in order from subtle to moderate to intense.

##### custClr (Custom color)

This element defines a custom color. The custom colors are used within a custom color list to define custom colors that are extra colors that can be appended to a theme. This is useful within corporate scenarios where there is a set corporate color palette from which to work.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | The name of the color shown in the color picker. |

##### dk1 (Dark 1)

This element defines a color that happens to be the dark 1 color. The set of twelve colors come together to form the color scheme for a theme.

##### dk2 (Dark 2)

This element defines a color that happens to be the dark 2 color. The set of twelve colors come together to form the color scheme for a theme.

##### effectStyle (Effect Style)

This element defines a set of effects and 3D properties that can be applied to an object.

##### effectStyleLst (Effect Style List)

This element defines a set of three effect styles that create the effect style list for a theme. The effect styles are arranged in order of subtle to moderate to intense.

##### fillStyleLst (Fill Style List)

This element defines a set of three fill styles that are used within a theme. The three fill styles are arranged in order from subtle to moderate to intense.

##### fmtScheme (Format Scheme)

This element contains the background fill styles, effect styles, fill styles, and line styles which define the style matrix for a theme. The style matrix consists of subtle, moderate, and intense fills, lines, and effects. The background fills are not generally thought of to directly be associated with the matrix, but do play a role in the style of the overall document. Usually, a given object chooses a single line style, a single fill style, and a single effect style in order to define the overall final look of the object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | Defines the name for the format scheme. The name is simply a human readable string which identifies the format scheme in the user interface. |

##### folHlink (Followed Hyperlink)

This element defines a color that happens to be the followed hyperlink color. The set of twelve colors come together to form the color scheme for a theme.

##### font (Font)

This element defines a font within the styles area of DrawingML. A font is defined by a script along with a typeface.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| script (Script) | Specifies the script, or language, in which the typeface is supposed to be used. |
| typeface (Typeface) | Specifies the font face to use. |

##### fontRef (Font Reference)

This element represents a reference to a themed font. When used it specifies which themed font to use along with a choice of color.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| idx (Identifier) | Specifies the identifier of the font to reference. |

##### fontScheme (Font Scheme)

This element defines the font scheme within the theme. The font scheme consists of a pair of major and minor fonts for which to use in a document. The major font corresponds well with the heading areas of a document, and the minor font corresponds well with the normal text or paragraph areas.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | The name of the font scheme shown in the user interface. |

##### hlink (Hyperlink)

This element defines a color that happens to be the hyperlink color. The set of twelve colors come together to form the color scheme for a theme.

##### lnDef (Line Default)

This element defines a default line that is used within a document.

##### lnStyleLst (Line Style List)

This element defines a list of three line styles for use within a theme. The three line styles are arranged in order from subtle to moderate to intense versions of lines. This list makes up part of the style matrix.

##### lt1 (Light 1)

This element defines a color that happens to be the accent 1 color. The set of twelve colors come together to form the color scheme for a theme.

##### lt2 (Light 2)

This element defines a color that happens to be the accent 1 color. The set of twelve colors come together to form the color scheme for a theme.

##### majorFont (Major Font)

This element defines the set of major fonts which are to be used under different languages or locals.

##### minorFont (Minor fonts)

This element defines the set of minor fonts that are to be used under different languages or locals.

##### scene3d (3D Scene Properties)

This element defines optional scene-level 3D properties to apply to an object.

##### spDef (Shape Default)

This element defines the formatting that is associated with the default shape. The default formatting can be applied to a shape when it is initially inserted into a document.

##### txDef (Text Default)

This element defines the default formatting which is applied to text in a document by default. The default formatting can and should be applied to the shape when it is initially inserted into a document.

#### Table Styles

Table styles are responsible for the rapid formatting that can be applied to a table. This rapid formatting takes different parts of a table into account, such as if the first row or last row should be emphasized, or if there is some type of banding (row for example) present on the table. All of these different types of formatting can be defined within a table style

##### band1H (Band 1 Horizontal)

This element describes the formatting for the first row in horizontal banding. Two different row formatting are applied to the table alternating in order to create a banding effect on the table.

##### band1V (Band 1 Vertical)

This element describes the formatting for the first row in vertical banding. Two different column formattings are applied to the table alternating in order to create a banding effect on the table.

##### band2H (Band 2 Horizontal)

This element describes the formatting for the second row in horizontal banding. Two different row formatting are applied to the table alternating in order to create a banding effect on the table.

##### band2V (Band 2 Vertical)

This element describes the formatting for the second row in vertical banding. Two different row formatting are applied to the table alternating in order to create a banding effect on the table.

##### bevel (Bevel)

This element defines the properties of the bevel associated with the 3D effect applied to a cell in a table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| h (Height) | Specifies the height of the bevel, or how far above the shape it is applied. |
| prst (Preset Bevel) | Specifies the preset bevel type which defines the look of the bevel. |
| w (Width) | Specifies the width of the bevel, or how far into the shape it is applied. |

##### bottom (Bottom Border)

This element defines the line properties associated with the bottom border in a table cell.

##### effect (Effect)

This element defines the effect that can be applied to a table as a whole through a table style.

##### effectRef (Effect Reference)

This element defines a reference to an effect style within the style matrix. The idx attribute refers the index of an effect style within the effectStyleLst element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| idx (Style Matrix Index) | Specifies the style matrix index of the style referred to. |

##### fill (Fill)

This element defines the fill that is applied to the table as a whole. The background of the table can contain a single fill that is the entire size of the table. This can allow for gradient fills, or image fills, which span the entire size of the table.

##### fillRef (Fill Reference)

This element defines a reference to a fill style within the style matrix. The idx attribute refers to the index of a fill style or background fill style within the presentation's style matrix, defined by the fmtScheme element. A value of 0 or 1000 indicates no background, values 1-999 refer to the index of a fill style within the fillStyleLst element, and values 1001 and above refer to the index of a background fill style within the bgFillStyleLst element. The value 1001 corresponds to the first background fill style, 1002 to the second background fill style, and so on.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| idx (Style Matrix Index) | Specifies the style matrix index of the style referred to. |

##### firstCol (First Column)

This element defines the cell formatting which can be applied to the first column of the table.

##### firstRow (First Row)

This element defines the cell formatting which can be applied to the first row of the table.

##### font (Font)

This element defines the font to be used within a given table cell text style. This element allows for exact definition of the font within the table style instead of referencing a themed font.

##### insideH (Inside Horizontal Border)

This element defines the line properties associated with the inner horizontal borders in a table.

##### insideV (Inside Vertical Border)

This element defines the line properties associated with the inner vertical borders in a table.

##### lastCol (Last Column)

This element defines the cell formatting which can be applied to the last column of the table.

##### lastRow (Last Row)

This element defines the cell formatting which can be applied to the last row of the table.

##### left (Left Border)

This element defines the line properties associated with the left border in a table cell.

##### lnRef (Line Reference)

This element defines a reference to a line style within the style matrix. The idx attribute refers the index of a line style within the fillStyleLst element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| idx (Style Matrix Index) | Specifies the style matrix index of the style referred to. |

##### neCell (Northeast Cell)

This element defies the formatting for the cell in the northeast corner of a table when both the first row formatting and last column formatting are enabled. This formatting is only applied to the single cell which overlaps between the two formatting options.

##### nwCell (Northwest Cell)

This element defies the formatting for the cell in the northwest corner of a table when both the first row formatting and first column formatting are enabled. This formatting is only applied to the single cell which overlaps between the two formatting options.

##### right (Right Border)

This element defines the line properties associated with the right border in a table cell.

##### seCell (Southeast Cell)

This element defies the formatting for the cell in the southeast corner of a table when both the last row formatting and last column formatting are enabled. This formatting is only applied to the single cell which overlaps between the two formatting options.

##### swCell (Southwest Cell)

This element defies the formatting for the cell in the southwest corner of a table when both the last row formatting and first column formatting are enabled. This formatting is only applied to the single cell which overlaps between the two formatting options.

##### tblBg (Table Background)

This element defines the formatting options which can be applied to the table background shape. The background shape is the same size as the entire table and can hold a fill or an effect which spans the entire table.

##### tblStyle (Table Style)

This is the root element for a table style. Within the table style are different formatting options available in order to apply a table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| styleId (Style ID) | Specifies a GUID identifying the table style in a unique manner. |
| styleName (Name) | Specifies the name of the table style which can show up in the user interface identifying the style to a user. |

##### tblStyleLst (Table Style List)

This element is simply a list of table styles which are used within a document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| def (Default) | The GUID corresponding to the default table style in the list of table styles. This default can be used when a table is initially inserted into a document. |

##### tcBdr (Table Cell Borders)

This element defines the borders for the cells within a table.

##### tcStyle (Table Cell Style)

This element defines the style for a give cell in a table.

##### tcTxStyle (Table Cell Text Style)

This element defines the text properties associated with the text contained within a table cell.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| b (Bold) | Specifies if the text is to be bolded. |
| i (Italic) | Specifies if the text is to be italicized. |

##### tl2br (Top Left to Bottom Right Border)

This element defines the line properties associated with the border which goes from the top-left to the bottomright corner in a table cell.

##### top (Top Border)

This element defines the line properties associated with the top border in a table cell.

##### tr2bl (Top Right to Bottom Left Border)

This element defines the line properties associated with the border which goes from the top-right to the bottom-left corner in a table cell.

##### wholeTbl (Whole Table)

This element contains formatting options which are applied to the table as a whole when it is in its default state with no formatting options (first row, last row, etc) enabled.

### 3D drawings

The 3D portion of the DrawingML framework allows for the describing of a 3D scene to be placed within a document. This 3D scene can be described using text and shape objects along with various lighting, material and camera settings.

#### anchor (Anchor Point)

This element specifies a point in 3D space. This point is the point in space that anchors the backdrop plane.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| x (X-Coordinate in 3D) | X-Coordinate in 3D space. |
| y (Y-Coordinate in 3D) | Y-Coordinate in 3D space. |
| z (Z-Coordinate in 3D) | Z-Coordinate in 3D space. |

#### backdrop (Backdrop Plane)

This element defines a plane in which effects, such as glow and shadow, are applied in relation to the shape they are being applied to. The points and vectors contained within the backdrop define a plane in 3D space.

#### bevelB (Bottom Bevel)

This element holds the properties associated with defining a bevel on the bottom or back face of a shape.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| h (Height) | Specifies the height of the bevel, or how far above the shape it is applied. |
| prst (Preset Bevel) | Specifies the preset bevel type which defines the look of the bevel. |
| w (Width) | Specifies the width of the bevel, or how far into the shape it is applied. |

#### bevelT (Top Bevel)

This element holds the properties associated with defining a bevel on the top or front face of a shape.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| h (Height) | Specifies the height of the bevel, or how far above the shape it is applied. |
| prst (Preset Bevel) | Specifies the preset bevel type which defines the look of the bevel. |
| w (Width) | Specifies the width of the bevel, or how far into the shape it is applied. |

#### camera (Camera)

This element defines the placement and properties of the camera in the 3D scene. The camera position and properties modify the view of the scene.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fov (Field of View) | Provides an override for the default field of view for the camera. Different perspectives can be obtained by modifying this attribute. |
| prst (Preset Camera Type) | Defines the preset camera that is being used by the camera element. The preset camera defines a starting point for common preset rotations in space. |
| zoom (Zoom) | Defines the zoom factor of a given camera element. The zoom modifies the scene as a whole and zooms in or out accordingly. |

#### contourClr (Contour Color)

This element defines the color for the contour on a shape. The contour of a shape is a solid filled line which surrounds the outer edges of the shape.

#### extrusionClr (Extrusion Color)

This element defines the color of the extrusion applied to a shape. The extrusion on a shape is an artificial height applied to the geometry.

#### flatTx (No text in 3D scene)

Keep text out of 3D scene entirely.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| z (Z Coordinate) | Specifies the Z coordinate to be used in positioning the flat text within the 3D scene. |

#### lightRig (Light Rig)

This element defines the light rig associated with the table. The light rig comes into play when there is a 3D bevel applied to a cell. When 3D is used, the light rig defines the lighting properties associated with the scene.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dir (Direction) | Defines the direction from which the light rig is oriented in relation to the scene. |
| rig (Rig Preset) | Defines the preset type of light rig which is to be applied to the scene. |

#### norm (Normal)

This element defines a normal vector. To be more precise, this attribute defines a vector normal to the face of the backdrop plane.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dx (Distance along X-axis in 3D) | Distance along X-axis in 3D |
| dy (Distance along Y-axis in 3D) | Distance along Y-axis in 3D |
| dz (Distance along Z-axis in 3D) | Distance along Z-axis in 3D |

#### rot (Rotation)

This element defines a rotation in 3D space. A rotation in DrawingML is defined through the use of a latitude coordinate, a longitude coordinate, and a revolution about the axis as the latitude and longitude coordinates.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lat (Latitude) | Defines the latitude value of the rotation. |
| lon (Longitude) | Defines the longitude value of the rotation. |
| rev (Revolution) | This attributes defines the revolution around the central axis in the rotation. |

#### sp3d (Apply 3D shape properties)

This element defines the 3D properties associated with a particular shape in DrawingML. The 3D properties which can be applied to a shape are top and bottom bevels, a contour and an extrusion.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| contourW (Contour Width) | Defines the width of the contour on the shape. |
| extrusionH | Defines the height of the extrusion applied to the shape. |
| prstMaterial (Preset Material | Defines the preset material which is combined with the lighting properties to give the final look and feel of a shape. |
| z (Shape Depth) | Defines the z coordinate for the 3D shape. |

#### up (Up Vector)

This element defines a vector representing up. To be more precise, this attribute defines a vector representing up in relation to the face of the backdrop plane.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dx (Distance along X-axis in 3D) | Distance along X-axis in 3D |
| dy (Distance along Y-axis in 3D) | Distance along Y-axis in 3D |
| dz (Distance along Z-axis in 3D) | Distance along Z-axis in 3D |

### Shared Style Sheet

The shared style sheet aspects contained within DrawingML are responsible for containing formatting options and styles which can be used by applications to define a certain look or feel to documents. The shared style sheet can be used by any document category ([*Note*: For example, a presentation. *end note*]) to pull visual information from which formats the document in a certain way, or theme. The shared style sheet contains information that is not document-category specific.

#### clrMap (Color Map)

This element specifics the color mapping layer which allows a user to define colors for background and text. This allows for swapping out of light/dark colors for backgrounds and the text on top of the background in order to maintain readability of the text On a deeper level, this specifies exactly which colors the first 12 values refer to in the color scheme.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| accent1 | Specifies a color defined which is associated as the accent 1 color. |
| accent2 | Specifies a color defined which is associated as the accent 2 color. |
| accent3 | Specifies a color defined which is associated as the accent 3 color. |
| accent4 | Specifies a color defined which is associated as the accent 4 color. |
| accent5 | Specifies a color defined which is associated as the accent 5 color. |
| accent6 | Specifies a color defined which is associated as the accent 6 color. |
| bg1 | A color defined which is associated as the first background color. |
| bg2 | Specifies a color defined which is associated as the second background color. |
| folHlink | Specifies a color defined which is associated as the color for a followed hyperlink. |
| hlink | Specifies a color defined which is associated as the color for a hyperlink. |
| tx1 | Specifies a color defined which is associated as the first text color. |
| tx2 | Specifies a color defined which is associated as the second text color. |

#### clrScheme (Color Scheme)

This element defines a set of colors which are referred to as a color scheme. The color scheme is responsible for defining a list of twelve colors. The twelve colors consist of six accent colors, two dark colors, two light colors and a color for each of a hyperlink and followed hyperlink.

|  |  |
| --- | --- |
| **Sequence Index** | **Element (Color) Name** |
| 0 | dk1 (Dark 1) |
| 1 | lt1 (Light 1) |
| 2 | dk2 (Dark 2) |
| 3 | lt2 (Light 2) |
| 4 | accent1 (Accent 1) |
| 5 | accent2 (Accent 2) |
| 6 | accent3 (Accent 3) |
| 7 | accent4 (Accent 4) |
| 8 | accent5 (Accent 5) |
| 9 | accent6 (Accent 6) |
| 10 | hlink (Hyperlink) |
| 11 | folHlink (Followed Hyperlink) |

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | The common name for this color scheme. This name can show up in the user interface in a list of color schemes. |

#### custClrLst (Custom Color List)

This element allows for a custom color palette to be created and which shows up alongside other color schemes. This can be very useful, for example, when someone would like to maintain a corporate color palette.

#### extraClrScheme (Extra Color Scheme)

This element defines an auxiliary color scheme, which includes both a color scheme and color mapping. This is mainly used for backward compatibility concerns and roundtrips information required by earlier versions.

#### extraClrSchemeLst (Extra Color Scheme List)

This element is a container for the list of extra color schemes present in a document.

#### masterClrMapping (Master Color Mapping)

This element is a part of a choice for which color mapping is used within the document. There is also defined an overrideClrMapping (§20.1.6.8) element which, when specified, the override is used rather than the color mapping defined in the master. If this element is specified, then we specifically use the color mapping defined in the master.

#### objectDefaults (Object Defaults)

This element allows for the definition of default shape, line, and textbox formatting properties. An application can use this information to format a shape (or text) initially on insertion into a document.

#### overrideClrMapping (Override Color Mapping)

This element provides an override for the color mapping in a document. When defined, this color mapping is used in place of the already defined color mapping, or master color mapping. This color mapping is defined in the same manner as the other mappings within this document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| accent1 | Specifies a color defined which is associated as the accent 1 color. |
| accent2 | Specifies a color defined which is associated as the accent 2 color. |
| accent3 | Specifies a color defined which is associated as the accent 3 color. |
| accent4 | Specifies a color defined which is associated as the accent 4 color. |
| accent5 | Specifies a color defined which is associated as the accent 5 color. |
| accent6 | Specifies a color defined which is associated as the accent 6 color. |
| bg1 | A color defined which is associated as the first background color. |
| bg2 | Specifies a color defined which is associated as the second background color. |
| folHlink | Specifies a color defined which is associated as the color for a followed hyperlink. |
| hlink | Specifies a color defined which is associated as the color for a hyperlink. |
| tx1 | Specifies a color defined which is associated as the first text color. |
| tx2 | Specifies a color defined which is associated as the second text color. |

#### theme (Theme)

This element defines the root level complex type associated with a shared style sheet (or theme). This element holds all the different formatting options available to a document through a theme and defines the overall look and feel of the document when themed objects are used within the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | Specifies the name given to the theme. |

#### themeElements (Theme Elements)

This element defines the theme formatting options for the theme and is the workhorse of the theme. This is where the bulk of the shared theme information is contained and used by a document. This element contains the color scheme, font scheme, and format scheme elements which define the different formatting aspects of what a theme defines.

#### themeManager (Theme Manager)

The starting part for a theme file.

#### themeOverride (Theme Override)

This element allows for an override which changes just the colors, fonts, or effects of a single object, like a table for example. Currently it is used only to control overrides on the non-top-level masters within a presentation.

### Coordinate Systems and Transformations

The following elements are used to reflect dimensions, scaling, location, rotation, and flip information on groups and individual shapes respectively.

#### chExt (Child Extents)

This element specifies the size dimensions of the child extents rectangle and is used for calculations of grouping, scaling, and rotation behavior of shapes placed within a group.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| cx (Extent Length) | Specifies the length of the extents rectangle in EMUs. This rectangle shall dictate the size of the object as displayed (the result of any scaling to the original object). |
| cy (Extent Width) | Specifies the width of the extents rectangle in EMUs. This rectangle shall dictate the size of the object as displayed (the result of any scaling to the original object). |

#### chOff (Child Offset)

This element specifies the location of the child extents rectangle and is used for calculations of grouping, scaling, and rotation behavior of shapes placed within a group.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| x (X-Axis Coordinate) | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |
| y (Y-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |

#### ext (Extents)

This element specifies the size of the bounding box enclosing the referenced object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| cx (Extent Length) | Specifies the length of the extents rectangle in EMUs. This rectangle shall dictate the size of the object as displayed (the result of any scaling to the original object). |
| cy (Extent Width) | Specifies the width of the extents rectangle in EMUs. This rectangle shall dictate the size of the object as displayed (the result of any scaling to the original object). |

#### off (Offset)

This element specifies the location of the bounding box of an object. Effects on an object are not included in this bounding box.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| x (X-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |
| y (Y-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |

#### xfrm (2D Transform for Grouped Objects)

This element is nearly identical to the representation of 2-D transforms for ordinary shapes (§20.1.7.6). The only addition is a member to represent the Child offset and the Child extents.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| flipH (Horizontal Flip) | Horizontal flip. When true, this attribute defines that the group is flipped horizontally about the center of its bounding box. |
| flipV (Vertical Flip) | Vertical flip. When true, this attribute defines that the group is flipped vertically about the center of its bounding box. |
| rot (Rotation) | Rotation. Specifies the clockwise rotation of a group in 1/64000 of a degree. |

#### xfrm (2D Transform for Individual Objects)

This element represents 2-D transforms for ordinary shapes.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| flipH (Horizontal Flip) | Specifies a horizontal flip. When true, this attribute defines that the shape is flipped horizontally about the center of its bounding box. |
| flipV (Vertical Flip) | Specifies a vertical flip. When true, this attribute defines that the group is flipped vertically about the center of its bounding box. |
| rot (Rotation) | Specifies the rotation of the Graphic Frame. The units for which this attribute is specified in reside within the simple type definition referenced below. |

### Shape Fills, Effects, and Line Properties

This portion of the DrawingML framework describes effects defining the visual appearance of shapes and lines. Shapes can be filled in a variety of ways, with images, solid colors, gradients, or pattern fills. In addition, several visual effects can alter the appearance of a shape, and multiple effects can be combined together. Lines also can have special properties defining how they are rendered, included a dashed appearance or decorations at the line ends. This section documents the elements that define these properties and effects for shapes and lines.

#### alphaBiLevel (Alpha Bi-Level Effect)

This element represents an Alpha Bi-Level Effect.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| thresh (Threshold) | Specifies the threshold value for the alpha bi-level effect. |

#### alphaCeiling (Alpha Ceiling Effect)

This element represents an alpha ceiling effect.

#### alphaFloor (Alpha Floor Effect)

This element represents an alpha floor effect.

#### alphaInv (Alpha Inverse Effect)

This element represents an alpha inverse effect.

#### alphaMod (Alpha Modulate Effect)

This element represents an alpha modulate effect.

#### alphaModFix (Alpha Modulate Fixed Effect)

This element represents an alpha modulate fixed effect.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| amt (Amount) | Specifies the percentage amount to scale the alpha. |

#### alphaOutset (Alpha Inset/Outset Effect)

This element specifies an alpha outset/inset effect.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| rad (Radius) | Specifies the radius of outset/inset. |

#### alphaRepl (Alpha Replace Effect)

This element specifies an alpha replace effect.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| a (Alpha) | Specifies the new opacity value. |

#### bevel (Line Join Bevel)

This element specifies a Bevel Line Join.

#### bgClr (Background color)

This element specifies the background color of a Pattern fill.

#### biLevel (Bi-Level (Black/White) Effect)

This element specifies a bi-level (black/white) effect. Input colors whose luminance is less than the specified threshold value are changed to black. Input colors whose luminance are greater than or equal the specified value are set to white. The alpha effect values are unaffected by this effect.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| thresh (Threshold) | Specifies the luminance threshold for the Bi-Level effect. Values greater than or equal to the threshold are set to white. Values lesser than the threshold are set to black. |

#### blend (Blend Effect)

This element specifies a blend of several effects. The container specifies the raw effects to blend while the blend mode specifies how the effects are to be blended.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| blend (Blend Mode) | Specifies how to blend the two effects. |

#### blip (Blip)

This element specifies the existence of an image (binary large image or picture) and contains a reference to the image data.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| cstate | Specifies the compression state with which the picture is stored. This allows the application to specify the amount of compression that has been applied to a picture. |
| embed (Embedded | Specifies the identification information for an embedded picture. This attribute is used to specify an image that resides locally within the file. |
| link (Linked Picture | Specifies the identification information for a linked picture. This attribute is used to |
| **Attributes** | **Description** |
| Reference) | specify an image that does not reside within this file. |

#### blipFill (Picture Fill)

This element specifies the type of picture fill that the picture object has. Because a picture has a picture fill already by default, it is possible to have two fills specified for a picture object. An example of this is shown below.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dpi (DPI Setting) | Specifies the DPI (dots per inch) used to calculate the size of the blip. If not present or zero, the DPI in the blip is used. |
| rotWithShape | Specifies that the fill should rotate with the shape. That is, when the shape that has been filled with a picture and the containing shape (say a rectangle) is transformed with a rotation then the fill is transformed with the same rotation. |

#### blur (Blur Effect)

This element specifies a blur effect that is applied to the entire shape, including its fill. All color channels, including alpha, are affected.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| grow (Grow Bounds) | Specifies whether the bounds of the object should be grown as a result of the blurring. True indicates the bounds are grown while false indicates that they are not. |
| rad (Radius) | Specifies the radius of blur. |

#### clrChange (Color Change Effect)

This element specifies a Color Change Effect. Instances of clrFrom are replaced with instances of clrTo.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| useA (Consider Alpha Values) | Specifies whether alpha values are considered for the effect. Effect alpha values are considered if useA is true, else they are ignored. |

#### clrFrom (Change Color From)

This element specifies a color getting removed in a color change effect. It is the "from" or source input color.

#### clrRepl (Solid Color Replacement)

This element specifies a solid color replacement value. All effect colors are changed to a fixed color. Alpha values are unaffected.

#### clrTo (Change Color To)

This element specifies the color which replaces the clrFrom in a clrChange effect. This is the "target" or "to" color in the color change effect.

#### cont (Effect Container)

This element specifies an Effect Container. It is a list of effects.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | Specifies an optional name for this list of effects, so that it can be referred to later. Shall be unique across all effect trees and effect containers. |
| type (Effect Container Type) | Specifies the kind of container, either sibling or tree. |

#### custDash (Custom Dash)

This element specifies a custom dashing scheme. It is a list of dash stop elements which represent building block atoms upon which the custom dashing scheme is built.

#### ds (Dash Stop)

This element specifies a dash stop primitive. Dashing schemes are built by specifying an ordered list of dash stop primitive. A dash stop primitive consists of a dash and a space.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| d (Dash Length) | Specifies the length of the dash relative to the line width. |
| sp (Space Length) | Specifies the length of the space relative to the line width. |

#### duotone (Duotone Effect)

This element specifies a duotone effect.

#### effect (Effect)

This element specifies a reference to an existing effect container.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| ref (Reference) | Specifies the reference. Its value can be the name of an effect container, or one of four special references: |

#### effectDag (Effect Container)

This element specifies a list of effects. Effects are applied in the order specified by the container type (sibling or tree).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | Specifies an optional name for this list of effects, so that it can be referred to later. Shall be unique across all effect trees and effect containers. |
| type (Effect Container Type) | Specifies the kind of container, either sibling or tree. |

#### effectLst (Effect Container)

This element specifies a list of effects. Effects in an effectLst are applied in the default order by the rendering engine. The following diagrams illustrate the order in which effects are applied, both for shapes and for group shapes.

#### fgClr (Foreground color)

This element specifies the foreground color of a pattern fill.

#### fill (Fill)

This element specifies a fill which is one of blipFill, gradFill, grpFill, noFill, pattFill or solidFill.

#### fillOverlay (Fill Overlay Effect)

This element specifies a fill overlay effect. A fill overlay can be used to specify an additional fill for an object and blend the two fills together.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| blend (Blend) | Specifies how to blend the fill with the base effect. |

#### fillRect (Fill Rectangle)

This element specifies a fill rectangle. When stretching of an image is specified, a source rectangle, srcRect, is scaled to fit the specified fill rectangle.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| b (Bottom Offset) | Specifies the bottom edge of the rectangle. |
| l (Left Offset) | Specifies the left edge of the rectangle. |
| r (Right Offset) | Specifies the right edge of the rectangle. |
| t (Top Offset) | Specifies the top edge of the rectangle. |

#### fillToRect (Fill To Rectangle)

This element defines the "focus" rectangle for the center shade, specified relative to the fill tile rectangle. The center shade fills the entire tile except the margins specified by each attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| b (Bottom Offset) | Specifies the bottom edge of the rectangle. |
| l (Left Offset) | Specifies the left edge of the rectangle. |
| r (Right Offset) | Specifies the right edge of the rectangle. |
| t (Top Offset) | Specifies the top edge of the rectangle. |

#### glow (Glow Effect)

This element specifies a glow effect, in which a color blurred outline is added outside the edges of the object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| rad (Radius) | Specifies the radius of the glow. |

#### gradFill (Gradient Fill)

This element defines a gradient fill.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| flip (Tile Flip) | Specifies the direction(s) in which to flip the gradient while tiling. |
| rotWithShape | Specifies if a fill rotates along with a shape when the shape is rotated. |

#### grayscl (Gray Scale Effect)

This element specifies a gray scale effect. Converts all effect color values to a shade of gray, corresponding to their luminance. Effect alpha (opacity) values are unaffected.

#### grpFill (Group Fill)

This element specifies a group fill. When specified, this setting indicates that the parent element is part of a group and should inherit the fill properties of the group.

#### gs (Gradient stops)

This element defines a gradient stop. A gradient stop consists of a position where the stop appears in the color band.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| pos (Position) | Specifies where this gradient stop should appear in the color band. This position is specified in the range [0%, 100%], which corresponds to the beginning and the end of the color band respectively. |

#### gsLst (Gradient Stop List)

The list of gradient stops that specifies the gradient colors and their relative positions in the color band.

#### headEnd (Line Head/End Style)

This element specifies decorations which can be added to the head of a line.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| len (Length of Head/End) | Specifies the line end length in relation to the line width. |
| type (Line | Specifies the line end decoration, such as a triangle or arrowhead. |
| w (Width of Head/End) | Specifies the line end width in relation to the line width. |

#### hsl (Hue Saturation Luminance Effect)

This element specifies a hue/saturation/luminance effect. The hue, saturation, and luminance can each be adjusted relative to its current value.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| hue (Hue) | Specifies the number of degrees by which the hue is adjusted. |
| lum (Luminance) | Specifies the percentage by which the luminance is adjusted. |
| sat (Saturation) | Specifies the percentage by which the saturation is adjusted. |

#### innerShdw (Inner Shadow Effect)

This element specifies an inner shadow effect. A shadow is applied within the edges of the object according to the parameters given by the attributes.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| blurRad (Blur Radius) | Specifies the blur radius. |
| dir (Direction) | Specifies the direction to offset the shadow. |
| dist (Distance) | Specifies how far to offset the shadow. |

#### lin (Linear Gradient Fill)

This element specifies a linear gradient.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| ang (Angle) | Specifies the direction of color change for the gradient. To define this angle, let its value be x measured clockwise. Then ( -sin x, cos x ) is a vector parallel to the line of constant color in the gradient fill. |
| scaled (Scaled) | Whether the gradient angle scales with the fill region. Mathematically, if this flag is true, then the gradient vector ( cos x , sin x ) is scaled by the width (w) and height (h) of the fill region, so that the vector becomes ( w cos x, h sin x ) (before normalization). Observe that now if the gradient angle is 45 degrees, the gradient vector is ( w, h ), which goes |
| **Attributes** | **Description** |
|  | from top-left to bottom-right of the fill region. If this flag is false, the gradient angle is independent of the fill region and is not scaled using the manipulation described above. So a 45-degree gradient angle always give a gradient band whose line of constant color is parallel to the vector (1, -1). |

#### lum (Luminance Effect)

This element specifies a luminance effect. Brightness linearly shifts all colors closer to white or black. Contrast scales all colors to be either closer or further apart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bright (Brightness) | Specifies the percent to change the brightness. |
| contrast (Contrast) | Specifies the percent to change the contrast. |

#### miter (Miter Line Join)

This element specifies that a line join shall be mitered.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lim (Miter Join | Specifies the amount by which lines is extended to form a miter join - otherwise miter |
| **Attributes** | **Description** |
| Limit) | joins can extend infinitely far (for lines which are almost parallel). |

#### noFill (No Fill)

This element specifies that no fill is applied to the parent element.

#### outerShdw (Outer Shadow Effect)

This element specifies an Outer Shadow Effect.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Shadow Alignment) | Specifies shadow alignment; alignment happens first, effectively setting the origin for scale, skew, and offset. |
| blurRad (Blur Radius) | Specifies the blur radius of the shadow. |
| dir (Shadow Direction) | Specifies the direction to offset the shadow. |
| dist (Shadow Offset Distance) | Specifies the how far to offset the shadow. |
| kx (Horizontal Skew) | Specifies the horizontal skew angle. |
| ky (Vertical Skew) | Specifies the vertical skew angle. |
| rotWithShape | Specifies whether the shadow rotates with the shape if the shape is rotated. |
| sx (Horizontal Scaling Factor) | Specifies the horizontal scaling factor; negative scaling causes a flip. |
| sy (Vertical Scaling Factor) | Specifies the vertical scaling factor; negative scaling causes a flip. |

#### path (Path Gradient)

This element defines that a gradient fill follows a path vs. a linear line.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| path (Gradient Fill Path) | Specifies the shape of the path to follow. |

#### pattFill (Pattern Fill)

This element specifies a pattern fill. A repeated pattern is used to fill the object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| prst (Preset Pattern) | Specifies one of a set of preset patterns to fill the object. |

#### prstDash (Preset Dash)

This element specifies that a preset line dashing scheme should be used.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies which preset dashing scheme is to be used. |

#### prstShdw (Preset Shadow)

This element specifies that a preset shadow is to be used. Each preset shadow is equivalent to a specific outer shadow effect. For each preset shadow, the color element, direction attribute, and distance attribute represent the color, direction, and distance parameters of the corresponding outer shadow. Additionally, the rotateWithShape attribute of corresponding outer shadow is always false. Other non-default parameters of the outer shadow are dependent on the prst attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dir (Direction) | Specifies the direction to offset the shadow. |
| dist (Distance) | Specifies how far to offset the shadow. |
| prst (Preset Shadow) | Specifies which preset shadow to use. |

#### reflection (Reflection Effect)

This element specifies a reflection effect.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Shadow Alignment) | Specifies shadow alignment. |
| blurRad (Blur Radius) | Specifies the blur radius. |
| dir (Direction) | Specifies the direction of the alpha gradient ramp relative to the shape itself. |
| dist (Distance) | Specifies how far to distance the shadow. |
| endA (End Alpha) | Specifies the ending reflection opacity. |
| endPos (End Position) | Specifies the end position (along the alpha gradient ramp) of the end alpha value. |
| fadeDir (Fade Direction) | Specifies the direction to offset the reflection. |
| kx (Horizontal Skew) | Specifies the horizontal skew angle. |
| ky (Vertical Skew) | Specifies the vertical skew angle. |
| rotWithShape | Specifies if the reflection rotates with the shape. |
| stA (Start Opacity) | starting reflection opacity. |
| stPos (Start Position) | Specifies the start position (along the alpha gradient ramp) of the start alpha value. |
| sx (Horizontal Ratio) | Specifies the horizontal scaling factor. |
| sy (Vertical Ratio) | Specifies the vertical scaling factor. |

#### relOff (Relative Offset Effect)

This element specifies a relative offset effect. Sets up a new origin by offsetting relative to the size of the previous effect.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| tx (Offset X) | Specifies the X offset. |
| ty (Offset Y) | Specifies the Y offset. |

#### round (Round Line Join)

This element specifies that lines joined together have a round join.

#### softEdge (Soft Edge Effect)

This element specifies a soft edge effect. The edges of the shape are blurred, while the fill is not affected.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| rad (Radius) | Specifies the radius of blur to apply to the edges. |

#### solidFill (Solid Fill)

This element specifies a solid color fill. The shape is filled entirely with the specified color.

#### srcRect (Source Rectangle)

This element specifies the portion of the blip used for the fill.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| b (Bottom Offset) | Specifies the bottom edge of the rectangle. |
| l (Left Offset) | Specifies the left edge of the rectangle. |
| r (Right Offset) | Specifies the right edge of the rectangle. |
| t (Top Offset) | Specifies the top edge of the rectangle. |

#### stretch (Stretch)

This element specifies that a BLIP should be stretched to fill the target rectangle. The other option is a tile where a BLIP is tiled to fill the available area.

#### tailEnd (Tail line end style)

This element specifies decorations which can be added to the tail of a line.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| len (Length of Head/End) | Specifies the line end length in relation to the line width. |
| type (Line | Specifies the line end decoration, such as a triangle or arrowhead. |
| w (Width of Head/End) | Specifies the line end width in relation to the line width. |

#### tile (Tile)

This element specifies that a BLIP should be tiled to fill the available space. This element defines a "tile" rectangle within the bounding box. The image is encompassed within the tile rectangle, and the tile rectangle is tiled across the bounding box to fill the entire area.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Alignment) | Specifies where to align the first tile with respect to the shape. Alignment happens after the scaling, but before the additional offset. |
| flip (Tile Flipping) | Specifies the direction(s) in which to flip the source image while tiling. Images can be flipped horizontally, vertically, or in both directions to fill the entire region. |
| sx (Horizontal Ratio) | Specifies the amount to horizontally scale the srcRect. |
| sy (Vertical Ratio) | Specifies the amount to vertically scale the srcRect. |
| tx (Horizontal Offset) | Specifies additional horizontal offset after alignment. |
| ty (Vertical Offset) | Specifies additional vertical offset after alignment. |

#### tileRect (Tile Rectangle)

This element specifies a rectangular region of the shape to which the gradient is applied. This region is then tiled across the remaining area of the shape to complete the fill. The tile rectangle is defined by percentage offsets from the sides of the shape's bounding box.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| b (Bottom Offset) | Specifies the bottom edge of the rectangle. |
| l (Left Offset) | Specifies the left edge of the rectangle. |
| r (Right Offset) | Specifies the right edge of the rectangle. |
| t (Top Offset) | Specifies the top edge of the rectangle. |

#### tint (Tint Effect)

This element specifies a tint effect. Shifts effect color values towards/away from hue by the specified amount.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| amt (Amount) | Specifies by how much the color value is shifted. |
| hue (Hue) | Specifies the hue towards which to tint. |

#### xfrm (Transform Effect)

This element specifies a transform effect. The transform is applied to each point in the shape's geometry using the following matrix:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| kx (Horizontal Skew) | Specifies the horizontal skew angle, defined as the angle between the top-left corner and bottom-left corner of the object's original bounding box. If positive, the bottom edge of the shape is positioned to the right relative to the top edge. |
| ky (Vertical Skew) | Specifies the vertical skew angle, defined as the angle between the top-left corner and top-right corner of the object's original bounding box. If positive, the right edge of the object is positioned lower relative to the left edge. |
| sx (Horizontal Ratio) | Specifies a percentage by which to horizontally scale the object. |
| sy (Vertical Ratio) | Specifies a percentage by which to vertically scale the object. |
| tx (Horizontal Shift) | Specifies an amount by which to shift the object along the x-axis. |
| ty (Vertical Shift) | Specifies an amount by which to shift the object along the y-axis. |

### Shape Definitions and Attributes

The Shape Definitions and Attributes portion of the DrawingML framework deals with all geometric properties for shapes within a document. This includes both preset geometries that publicly are interpreted by the generating application and custom geometries that have their points and curves explicitly specified. In addition to the underlying geometry of the shape there are also other coordinate-based properties for each shape that this framework describes.

#### ahLst (List of Shape Adjust Handles)

This element specifies the adjust handles that are applied to a custom geometry. These adjust handles specify points within the geometric shape that can be used to perform certain transform operations on the shape.

#### ahPolar (Polar Adjust Handle)

This element specifies a polar adjust handle for a custom shape. The position of this adjust handle is specified by the corresponding pos child element. The allowed adjustment of this adjust handle are specified via it's min and max attributes. Based on the adjustment of this adjust handle certain corresponding guides are updated to contain these values.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| gdRefAng (Angle Adjustment Guide) | Specifies the name of the guide that is updated with the adjustment angle from this adjust handle. |
| gdRefR (Radial Adjustment Guide) | Specifies the name of the guide that is updated with the adjustment radius from this adjust handle. |
| maxAng (Maximum Angle Adjustment) | Specifies the maximum angle position that is allowed for this adjustment handle. If this attribute is omitted, then it is assumed that this adjust handle cannot move angularly. That is the maxAng and minAng are equal. |
| maxR (Maximum | Specifies the maximum radial position that is allowed for this adjustment handle. If this attribute is omitted, then it is assumed that this adjust handle cannot move radially. That is the maxR and minR are equal. |
| minAng (Minimum Angle Adjustment) | Specifies the minimum angle position that is allowed for this adjustment handle. If this attribute is omitted, then it is assumed that this adjust handle cannot move angularly. That is the maxAng and minAng are equal. |
| minR (Minimum | Specifies the minimum radial position that is allowed for this adjustment handle. If this attribute is omitted, then it is assumed that this adjust handle cannot move radially. That is the maxR and minR are equal. |

#### ahXY (XY Adjust Handle)

This element specifies an XY-based adjust handle for a custom shape. The position of this adjust handle is specified by the corresponding pos child element. The allowed adjustment of this adjust handle are specified via it's min and max type attributes. Based on the adjustment of this adjust handle certain corresponding guides are updated to contain these values.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| gdRefX (Horizontal Adjustment Guide) | Specifies the name of the guide that is updated with the adjustment x position from this adjust handle. |
| gdRefY (Vertical Adjustment Guide) | Specifies the name of the guide that is updated with the adjustment y position from this adjust handle. |
| maxX (Maximum | Specifies the maximum horizontal position that is allowed for this adjustment handle. If this attribute is omitted, then it is assumed that this adjust handle cannot move in the x direction. That is the maxX and minX are equal. |
| maxY (Maximum | Specifies the maximum vertical position that is allowed for this adjustment handle. If this attribute is omitted, then it is assumed that this adjust handle cannot move in the y direction. That is the maxY and minY are equal. |
| minX (Minimum | Specifies the minimum horizontal position that is allowed for this adjustment handle. If this attribute is omitted, then it is assumed that this adjust handle cannot move in the x direction. That is the maxX and minX are equal. |
| minY (Minimum | Specifies the minimum vertical position that is allowed for this adjustment handle. If this attribute is omitted, then it is assumed that this adjust handle cannot move in the y direction. That is the maxY and minY are equal. |

#### arcTo (Draw Arc To)

This element specifies the existence of an arc within a shape path. It draws an arc with the specified parameters from the current pen position to the new point specified. An arc is a line that is bent based on the shape of a supposed circle. The length of this arc is determined by specifying both a start angle and an ending angle that act together to effectively specify an end point for the arc.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| hR (Shape Arc Height Radius) | This attribute specifies the height radius of the supposed circle being used to draw the arc. This gives the circle a total height of (2 \* hR). This total height could also be called it's vertical diameter as it is the diameter for the y axis only. |
| stAng (Shape Arc Start Angle) | Specifies the start angle for an arc. This angle specifies what angle along the supposed circle path is used as the start position for drawing the arc. This start angle is locked to the last known pen position in the shape path. Thus guaranteeing a continuos shape path. |
| swAng (Shape Arc Swing Angle) | Specifies the swing angle for an arc. This angle specifies how far angle-wise along the supposed cicle path the arc is extended. The extension from the start angle is always in the clockwise direction around the supposed circle. |
| wR (Shape Arc Width Radius) | This attribute specifies the width radius of the supposed circle being used to draw the arc. This gives the circle a total width of (2 \* wR). This total width could also be called it's horizontal diameter as it is the diameter for the x axis only. |

#### avLst (List of Shape Adjust Values)

This element specifies the adjust values that are applied to the specified shape. An adjust value is simply a guide that has a value based formula specified. That is, no calculation takes place for an adjust value guide. Instead, this guide specifies a parameter value that is used for calculations within the shape guides.

#### close (Close Shape Path)

This element specifies the ending of a series of lines and curves in the creation path of a custom geometric shape. When this element is encountered, the generating application should consider the corresponding path closed. That is, any further lines or curves that follow this element should be ignored.

#### cubicBezTo (Draw Cubic Bezier Curve To)

This element specifies to draw a cubic bezier curve along the specified points. To specify a cubic bezier curve there needs to be 3 points specified. The first two are control points used in the cubic bezier calculation and the last is the ending point for the curve. The coordinate system used for this kind of curve is the path coordinate system as this element is path specific.

#### custGeom (Custom Geometry)

This element specifies the existence of a custom geometric shape. This shape consists of a series of lines and curves described within a creation path. In addition to this there can also be adjust values, guides, adjust handles, connection sites and an inscribed rectangle specified for this custom geometric shape.

#### cxn (Shape Connection Site)

This element specifies the existence of a connection site on a custom shape. A connection site allows a cxnSp to be attached to this shape. This connection is maintained when the shape is repositioned within the document. It should be noted that this connection is placed within the shape bounding box using the transform coordinate system which is also called the shape coordinate system, as it encompasses the entire shape. The width and height for this coordinate system are specified within the ext transform element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| ang (Connection Site Angle) | Specifies the incoming connector angle. This angle is the angle around the connection site that an incoming connector tries to be routed to. This allows connectors to know where the shape is in relation to the connection site and route connectors so as to avoid any overlap with the shape. |

#### cxnLst (List of Shape Connection Sites)

This element specifies all the connection sites that are used for this shape. A connection site is specified by defining a point within the shape bounding box that can have a cxnSp element attached to it. These connection sites are specified using the shape coordinate system that is specified within the ext transform element.

#### gd (Shape Guide)

This element specifies the precense of a shape guide that is used to govern the geometry of the specified shape. A shape guide consists of a formula and a name that the result of the formula is assigned to. Recognized formulas are listed with the fmla attribute documentation for this element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fmla (Shape Guide Formula) | Specifies the formula that is used to calculate the value for a guide. Each formula has a certain number of arguments and a specific set of operations to perform on these arguments in order to generate a value for a guide. There are a total of 17 different formulas available. These are shown below with the usage for each defined. |
| name (Shape Guide Name) | Specifies the name that is used to reference to this guide. This name can be used just as a variable would within an equation. That is this name can be substituted for literal values within other guides or the specification of the shape path. |

#### gdLst (List of Shape Guides)

This element specifies all the guides that are used for this shape. A guide is specified by the gd element and defines a calculated value that can be used for the construction of the corresponding shape.

#### lnTo (Draw Line To)

This element specifies the drawing of a straight line from the current pen position to the new point specified. This line becomes part of the shape geometry, representing a side of the shape. The coordinate system used when specifying this line is the path coordinate system.

#### moveTo (Move Path To)

This element specifies a set of new coordinates to move the shape cursor to. This element is only used for drawing a custom geometry. When this element is utilized the pt element is used to specify a new set of shape coordinates that the shape cursor should be moved to. This does not draw a line or curve to this new position from the old position but simply move the cursor to a new starting position. It is only when a path drawing element such as lnTo is used that a portion of the path is drawn.

#### path (Shape Path)

This element specifies a creation path consisting of a series of moves, lines and curves that when combined forms a geometric shape. This element is only utilized if a custom geometry is specified.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| extrusionOk (3D Extrusion Allowed) | Specifies that the use of 3D extrusions are possible on this path. This allows the generating application to know whether 3D extrusion can be applied in any form. If this attribute is omitted then a value of 0, or false is assumed. |
| fill (Path Fill) | Specifies how the corresponding path should be filled. If this attribute is omitted, a value of "norm" is assumed. |
| h (Path Height) | Specifies the height, or maximum y coordinate that should be used for within the path coordinate system. This value determines the vertical placement of all points within the corresponding path as they are all calculated using this height attribute as the max y coordinate. |
| stroke (Path Stroke) | Specifies if the corresponding path should have a path stroke shown. This is a boolean value that affect the outline of the path. If this attribute is omitted, a value of true is assumed. |
| w (Path Width) | Specifies the width, or maximum x coordinate that should be used for within the path coordinate system. This value determines the horizontal placement of all points within the corresponding path as they are all calculated using this width attribute as the max x coordinate. |

#### pathLst (List of Shape Paths)

This element specifies the entire path that is to make up a single geometric shape. The pathLst can consist of many individual paths within it.

#### pos (Shape Position Coordinate)

Specifies a position coordinate within the shape bounding box. It should be noted that this coordinate is placed within the shape bounding box using the transform coordinate system which is also called the shape coordinate system, as it encompasses the entire shape. The width and height for this coordinate system are specified within the ext transform element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| x (X-Coordinate) | Specifies the x coordinate for this position coordinate. The units for this coordinate space are defined by the width of the path coordinate system. This coordinate system is overlayed on top of the shape coordinate system thus occupying the entire shape bounding box. Because the units for within this coordinate space are determined by the path width and height an exact measurement unit cannot be specified here. |
| y (Y-Coordinate) | Specifies the y coordinate for this position coordinate. The units for this coordinate space are defined by the height of the path coordinate system. This coordinate system is overlayed on top of the shape coordinate system thus occupying the entire shape bounding box. Because the units for within this coordinate space are determined by the path width and height an exact measurement unit cannot be specified here. |

#### prstGeom (Preset geometry)

This element specifies when a preset geometric shape should be used instead of a custom geometric shape. The generating application should be able to render all preset geometries enumerated in the ST\_ShapeType list.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| prst (Preset Shape) | Specifies the preset geometry that is used for this shape. This preset can have any of the values in the enumerated list for ST\_ShapeType. This attribute is required in order for a preset geometry to be rendered. |

#### prstTxWarp (Preset Text Warp)

This element specifies when a preset geometric shape should be used to transform a piece of text. This operation is known formally as a text warp. The generating application should be able to render all preset geometries enumerated in the ST\_TextShapeType list.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| prst (Preset Warp Shape) | Specifies the preset geometry that is used for a shape warp on a piece of text. This preset can have any of the values in the enumerated list for ST\_TextShapeType. This attribute is required in order for a text warp to be rendered. |

#### pt (Shape Path Point)

This element specifies an x-y coordinate within the path coordinate space. This coordinate space is determined by the width and height attributes defined within the path element. A point is utilized by one of it's parent elements to specify the next point of interest in custom geometry shape. Depending on the parent element used the point can either have a line drawn to it or the cursor can simply be moved to this new location.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| x (X-Coordinate) | Specifies the x coordinate for this position coordinate. The units for this coordinate space are defined by the width of the path coordinate system. This coordinate system is overlayed on top of the shape coordinate system thus occupying the entire shape bounding box. Because the units for within this coordinate space are determined by the path width and height an exact measurement unit cannot be specified here. |
| y (Y-Coordinate) | Specifies the y coordinate for this position coordinate. The units for this coordinate space are defined by the height of the path coordinate system. This coordinate system is overlayed on top of the shape coordinate system thus occupying the entire shape bounding box. Because the units for within this coordinate space are determined by the path width and height an exact measurement unit cannot be specified here. |

#### quadBezTo (Draw Quadratic Bezier Curve To)

This element specifies to draw a quadratic bezier curve along the specified points. To specify a quadratic bezier curve there needs to be 2 points specified. The first is a control point used in the quadratic bezier calculation and the last is the ending point for the curve. The coordinate system used for this type of curve is the path coordinate system as this element is path specific.

#### rect (Shape Text Rectangle)

This element specifies the rectangular bounding box for text within a custGeom shape. The default for this rectangle is the bounding box for the shape. This can be modified using this elements four attributes to inset or extend the text bounding box.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| b (Bottom Position) | Specifies the y coordinate of the bottom edge for a shape text rectangle. The units for this edge is specified in EMUs as the positioning here is based on the shape coordinate system. The width and height for this coordinate system are specified within the ext transform element. |
| l (Left) | Specifies the x coordinate of the left edge for a shape text rectangle. The units for this edge is specified in EMUs as the positioning here is based on the shape coordinate system. The width and height for this coordinate system are specified within the ext transform element. |
| r (Right) | Specifies the x coordinate of the right edge for a shape text rectangle. The units for this edge is specified in EMUs as the positioning here is based on the shape coordinate system. The width and height for this coordinate system are specified within the ext transform element. |
| t (Top) | Specifies the y coordinate of the top edge for a shape text rectangle. The units for this edge is specified in EMUs as the positioning here is based on the shape coordinate system. The width and height for this coordinate system are specified within the ext transform element. |

### Simple Types

This is the complete list of simple types dedicated to DrawingML framework.

#### ST\_AdjAngle (Adjustable Angle Methods)

This simple type is an adjustable angle, either an absolute angle or a reference to a geometry guide. The units for an adjustable angle are 60,000ths of a degree.

#### ST\_AdjCoordinate (Adjustable Coordinate Methods)

This simple type is an adjustable coordinate is either an absolute coordinate position or a reference to a geometry guide.

#### ST\_Angle (Angle)

This simple type represents an angle in 60,000ths of a degree. Positive angles are clockwise (i.e., towards the positive y axis); negative angles are counter-clockwise (i.e., towards the negative y axis).

#### ST\_AnimationBuildType (Animation Build Type)

This simple type specifies the ways that an animation can be built, or animated.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| allAtOnce (Animate At Once) | Animate all objects as one. |

#### ST\_AnimationChartBuildType (Chart Animation Build Type)

This simple type specifies the ways that a chart animation can be built. That is, it specifies the way in which the objects within the chart should be animated.

#### ST\_AnimationChartOnlyBuildType (Chart only Animation Types)

This simple type specifies the build options available only for animating a chart. These options specify the manner in which the objects within the chart should be grouped and animated.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| category (Catefory) | Animate by each category |
| categoryEl (Category Element) | Animate by each element within the category |
| series (Series) | Animate by each series. |
| seriesEl (Series Element) | Animate by each element within the series |

#### ST\_AnimationDgmBuildType (Diagram Animation Build Type)

This simple type specifies the ways that a diagram animation can be built. That is, it specifies the way in which the objects within the diagram graphical object should be animated.

#### ST\_AnimationDgmOnlyBuildType (Diagram only Animation Types)

This simple type specifies the build options available only for animating a diagram. These options specify the manner in which the objects within the chart should be grouped and animated.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| lvlAtOnce (Each Level at Once) | Animate the diagram one level at a time, animating the whole level as one object |
| lvlOne (Level One-by-One) | Animate the diagram by the elements within a level, animating them one level element at a time. |
| one (Elements One-by-One) | Animate the diagram by elements. For a tree diagram the animation occurs by branch within the diagram tree. |

#### ST\_BevelPresetType (Bevel Presets)

Represents a preset for a type of bevel which can be applied to a shape in 3D. The bevel properties are applied differently depending on the type of bevel defined for a shape.

#### ST\_BlackWhiteMode (Black and White Mode)

This simple type specifies how an object should be rendered when specified to be in black and white mode.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| auto (Automatic) | Object rendered with automatic coloring |
| black (Black) | Object rendered with black-only coloring |
| blackGray (Black and Gray) | Object rendered with black and gray coloring |
| blackWhite (Black and White) | Object rendered within black and white coloring |
| clr (Color) | Object rendered with normal coloring |
| gray (Gray) | Object rendered with gray coloring |
| grayWhite (Gray and White) | Object rendered within gray and white coloring |
| hidden (Hidden) | Object rendered with hidden coloring |
| invGray (Inverse Gray) | Object rendered with inverse gray coloring |
| ltGray (Light Gray) | Object rendered with light gray coloring |
| white (White) | Object rendered within white coloirng |

#### ST\_BlendMode (Blend Mode)

This simple type describes how to render effects one on top of another.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| darken (Darken) | Darken |
| lighten (Lighten) | Lighten |
| mult (Multiply) | Multiply |
| over (Overlay) | Overlay |
| screen (Screen) | Screen |

#### ST\_BlipCompression (Blip Compression Type)

This type specifies the amount of compression that has been used for a particular binary large image or picture

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| email (Email Compression) | Compression size suitable for inclusion with email |
| hqprint (High Quality Printing Compression) | Compression size suitable for high quality printing |
| none (No Compression) | No compression was used |
| print (Printing Compression) | Compression size suitable for printing |
| screen (Screen Viewing Compression) | Compression size suitable for viewing on screen |

#### ST\_ChartBuildStep (Chart Animation Build Step)

This simple type specifies an animation build step within a chart animation.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| allPts (All Points) | Animate all points within the chart for this animation build step |
| category (Category) | Animate a chart category for this animation build step |
| gridLegend (Grid and Legend) | Animate the chart grid and legend for this animation build step |
| ptInCategory (Category Points) | Animate a point in a chart category for this animation build step |
| ptInSeries (Series Points) | Animate a point in a chart series for this animation build step |
| series (Series) | Animate a chart series for this animation build step |

#### ST\_ColorSchemeIndex (Theme Color Reference)

A reference to a color in the color scheme.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| accent1 (Accent 1) | Represents the accent 1 color. |
| accent2 (Accent 2) | Represents the accent 2 color. |
| accent3 (Accent 3) | Represents the accent 3 color. |
| accent4 (Accent 4) | Represents the accent 4 color. |
| accent5 (Accent 5) | Represents the accent 5 color. |
| accent6 (Accent 6) | Represents the accent 6 color. |
| dk1 (Dark 1) | Represents the first dark color. |
| dk2 (Dark 2) | Represents the second dark color. |
| folHlink (Followed Hyperlink) | Represents the followed hyperlink color. |
| hlink (Hyperlink) | Represents the hyperlink color. |
| lt1 (Light 1) | Represents the first light color. |
| lt2 (Light 2) | Represents the second light color. |

#### ST\_CompoundLine (Compound Line Type)

This simple type specifies the compound line type that is to be used for lines with text such as underlines.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| dbl (Double Lines) | Double lines of equal width |
| sng (Single Line) | Single line: one normal width |
| thickThin (Thick Thin Double Lines) | Double lines: one thick, one thin |
| thinThick (Thin Thick Double Lines) | Double lines: one thin, one thick |
| tri (Thin Thick Thin Triple Lines) | Three lines: thin, thick, thin |

#### ST\_Coordinate (Coordinate)

This simple type represents a one dimensional position or length as either:

#### ST\_Coordinate32 (Coordinate Point)

This simple type specifies a coordinate within the document. This can be used for measurements or spacing; its maximum size is 2147483647 EMUs.

#### ST\_Coordinate32Unqualified (Coordinate Point)

This simple type specifies a coordinate within the document. This can be used for measurements or spacing with the maximum size requirement being a 32 bit integer.

#### ST\_CoordinateUnqualified (Coordinate)

This simple type represents a one dimensional position or length in EMUs.

#### ST\_DgmBuildStep (Diagram Animation Build Steps)

This simple type specifies an animation build step within a diagram animation.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bg (Background) | Animate the diagram background for this animation build step |
| sp (Shape) | Animate a diagram shape for this animation build step |

#### ST\_DrawingElementId (Drawing Element ID)

This simple type specifies a unique integer identifier for each drawing element.

#### ST\_EffectContainerType (Effect Container Type)

This simple type determines the relationship between effects in a container, either sibling or tree.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| sib (Sibling) | Each effect is separately applied to the parent object. |
| tree (Tree) | Each effect is applied to the result of the previous effect. |

#### ST\_FixedAngle (Fixed Angle)

This simple type represents a fixed range angle in 60000ths of a degree. Range from (-90, 90 degrees).

#### ST\_FixedPercentage (Fixed Percentage)

This simple type represents a fixed percentage from negative one hundred to positive one hundred percent. See the union's member types for details.

#### ST\_FontCollectionIndex (Font Collection Index)

This simple type represents one of the fonts associated with the style.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| major (Major Font) | The major font of the style's font scheme. |
| minor (Minor Font) | The minor font of the style's font scheme. |
| none (None) | No font reference. |

#### ST\_FOVAngle (Field of View Angle)

Represents a positive angle in 60000ths of a degree. Range from [0, 180] degrees.

#### ST\_GeomGuideFormula (Geometry Guide Formula Properties)

This simple type specifies a geometry guide formula.

#### ST\_GeomGuideName (Geometry Guide Name Properties)

This simple type specifies a geometry guide name.

#### ST\_LightRigDirection (Light Rig Direction)

Represents the direction from which the light rig is positioned relative to the scene. The light rig, itself, can be made up of multiple lights in any orientation around a given shape. This simple type defines the orientation of the light rig as a whole, and not the individual lights within the rig. This means that because the direction of the light rig is left, that does not guarantee the light is coming from the left side of the shape, but rather the orientation of the rig as a whole is rotated to the left.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Bottom) | [*Example*: Consider the following example of a light direction from the bottom: |
| bl (Bottom Left) | [*Example*: Consider the following example of a light direction from the bottom left: |
| br (Bottom Right) | [*Example*: Consider the following example of a light direction from the bottom right: |
| l (Left) | [*Example*: Consider the following example of a light direction from the left: |
| r (Right) | [*Example*: Consider the following example of a light direction from the right: |
| t (Top) | [*Example*: Consider the following example of a light direction from the top: |
| tl (Top Left) | [*Example*: Consider the following example of a light direction from the top left: |
| tr (Top Right) | [*Example*: Consider the following example of a light direction from the top right: |

#### ST\_LightRigType (Light Rig Type)

Represents a preset light right that can be applied to a shape. The light rig represents a group of lights oriented in a specific way relative to a 3D scene. The following properties were used to define the shape used in the image examples below:

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| balanced (Light Rig Enum ( Balanced )) | Balanced |
| brightRoom (Bright Room) | [*Example*: Consider the following example of the brightRoom light rig applied to a basic shape: |
| chilly (Chilly) | [*Example*: Consider the following example of the chilly light rig applied to a basic shape: |
| contrasting (Contrasting) | [*Example*: Consider the following example of the contrasting light rig applied to a basic shape: |
| flat (Flat) | [*Example*: Consider the following example of the flat light rig applied to a basic shape: |
| flood (Flood) | [*Example*: Consider the following example of the flood light rig applied to a basic shape: |
| freezing (Freezing) | [*Example*: Consider the following example of the freezing light rig applied to a basic shape: |
| glow (Glow) | [*Example*: Consider the following example of the glow light rig applied to a basic shape: |
| harsh (Harsh) | *Example*: Consider the following example of the harsh light rig applied to a basic shape: |
| legacyFlat1 (Legacy Flat 1) | [*Example*: Consider the following example of the legacyFlat1 light rig applied to a basic shape: |
| legacyFlat2 (Legacy Flat 2) | [*Example*: Consider the following example of the legacyFlat2 light rig applied to a basic shape: |
| legacyFlat3 (Legacy Flat 3) | [*Example*: Consider the following example of the legacyFlat3 light rig applied to a basic shape: |
| legacyFlat4 (Legacy Flat 4) | [*Example*: Consider the following example of the legacyFlat4 light rig applied to a basic shape: |
| legacyHarsh1 (Legacy Harsh 1) | [*Example*: Consider the following example of the legacyHarsh1 light rig applied to a basic shape: |
| legacyHarsh2 (Legacy Harsh 2) | [*Example*: Consider the following example of the legacyHarsh2 light rig applied to a basic shape: |
| legacyHarsh3 (Legacy Harsh 3) | [*Example*: Consider the following example of the legacyHarsh3 light rig applied to a basic shape: |
| legacyHarsh4 (Legacy Harsh 4) | [*Example*: Consider the following example of the legacyHarsh4 light rig applied to a basic shape: |
| legacyNormal1 (Legacy Normal 1) | [*Example*: Consider the following example of the legacyNormal1 light rig applied to a basic shape: |
| legacyNormal2 (Legacy Normal 2) | [*Example*: Consider the following example of the legacyNormal2 light rig applied to a basic shape: |
| legacyNormal3 (Legacy Normal 3) | [*Example*: Consider the following example of the legacyNormal3 light rig applied to a basic shape: |
| legacyNormal4 (Legacy Normal 4) | [*Example*: Consider the following example of the legacyNormal4 light rig applied to a basic shape: |
| morning (Morning) | [*Example*: Consider the following example of the morning light rig applied to a basic shape: |
| soft (Soft) | [*Example*: Consider the following example of the soft light rig applied to a basic shape: |
| sunrise (Sunrise) | [*Example*: Consider the following example of the sunrise light rig applied to a basic shape: |
| sunset (Sunset) | [*Example*: Consider the following example of the sunset light rig applied to a basic shape: |
| threePt (Three Point) | [*Example*: Consider the following example of the threePt light rig applied to a basic shape: |
| twoPt (Two Point) | [*Example*: Consider the following example of the twoPt light rig applied to a basic shape: |

#### ST\_LineCap (End Line Cap)

This simple type specifies how to cap the ends of lines. This also affects the ends of line segments for dashed lines.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| flat (Flat Line Cap) | Line ends at end point. |
| rnd (Round Line Cap) | Rounded ends. Semi-circle protrudes by half line width. |
| sq (Square Line Cap) | Square protrudes by half line width. |

#### ST\_LineEndLength (Line End Length)

This simple type represents the length of the line end decoration (e.g., arrowhead) relative to the width of the line itself.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| lg (Large) | Large |
| med (Medium) | Medium |
| sm (Small) | Small |

#### ST\_LineEndType (Line End Type)

This simple type represents the shape decoration that appears at the ends of lines. For example, one choice is an arrow head.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| arrow (Arrow Head) | Line arrow head |
| diamond (Diamond) | Diamond |
| none (None) | No end |
| oval (Oval) | Oval |
| stealth (Stealth Arrow) | Stealth arrow head |
| triangle (Triangle Arrow Head) | Triangle arrow head |

#### ST\_LineEndWidth (Line End Width)

This simple type represents the width of the line end decoration (e.g., arrowhead) relative to the width of the line itself.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| lg (Large) | Large |
| med (Medium) | Medium |
| sm (Small) | Small |

#### ST\_LineWidth (Line Width)

This simple type specifies the width of a line in EMUs. 1 pt = 12700 EMUs.

#### ST\_OnOffStyleType (On/Off Style Type)

This simple type represents whether a style property should be applied.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| def (Default) | Follow parent settings. For a themed property, follow the theme settings. For an unthemed property, follow the parent setting in the property inheritance chain. |
| off (Off) | Property is off. |
| on (On) | Property is on. |

#### ST\_PathFillMode (Path Fill Mode)

This simple type specifies the manner in which a path should be filled. The lightening and darkening of a path allow for certain parts of the shape to be colored lighter of darker depending on user preference.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| darken (Darken Path Fill) | This specifies that the corresponding path should have a darker shaded color applied to it’s fill. |
| darkenLess (Darken Path Fill Less) | This specifies that the corresponding path should have a slightly darker shaded color applied to it’s fill. |
| lighten (Lighten Path Fill) | This specifies that the corresponding path should have a lightly shaded color applied to it’s fill. |
| lightenLess (Lighten Path Fill Less) | This specifies that the corresponding path should have a slightly lighter shaded color applied to it’s fill. |
| none (No Path Fill) | This specifies that the corresponding path should have no fill. |
| norm (Normal Path Fill) | This specifies that the corresponding path should have a normally shaded color applied to it’s fill. |

#### ST\_PathShadeType (Path Shade Type)

This simple type describes the shape of path to follow for a path gradient shade.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| circle (Circle) | Gradient follows a circular path |
| rect (Rectangle) | Gradient follows a rectangular path |
| shape (Shape) | Gradient follows the shape |

#### ST\_PenAlignment (Alignment Type)

This simple type specifies the Pen Alignment type for use within a text body.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ctr (Center Alignment) | Center pen (line drawn at center of path stroke). |
| in (Inset Alignment) | Inset pen (the pen is aligned on the inside of the edge of the path). |

#### ST\_Percentage (Percentage)

This simple type specifies that its contents will contain a percentage value. See the union's member types for details.

#### ST\_PitchFamily (Pitch Family)

This simple type specifies a font pitch.

|  |  |
| --- | --- |
| **Value** | **Description** |
| 0x00 | DEFAULT PITCH + UNKNOWN FONT FAMILY |
| 0x01 | FIXED PITCH + UNKNOWN FONT FAMILY |
| 0x02 | VARIABLE PITCH + UNKNOWN FONT FAMILY |
| 0x10 | DEFAULT PITCH + ROMAN FONT FAMILY |
| 0x11 | FIXED PITCH + ROMAN FONT FAMILY |
| 0x12 | VARIABLE PITCH + ROMAN FONT FAMILY |
| 0x20 | DEFAULT PITCH + SWISS FONT FAMILY |
| 0x21 | FIXED PITCH + SWISS FONT FAMILY |
| 0x22 | VARIABLE PITCH + SWISS FONT FAMILY |
| 0x30 | DEFAULT PITCH + MODERN FONT FAMILY |
| 0x31 | FIXED PITCH + MODERN FONT FAMILY |
| 0x32 | VARIABLE PITCH + MODERN FONT FAMILY |
| 0x40 | DEFAULT PITCH + SCRIPT FONT FAMILY |
| 0x41 | FIXED PITCH + SCRIPT FONT FAMILY |
| 0x42 | VARIABLE PITCH + SCRIPT FONT FAMILY |
| 0x50 | DEFAULT PITCH + DECORATIVE FONT FAMILY |
| 0x51 | FIXED PITCH + DECORATIVE FONT FAMILY |
| 0x52 | VARIABLE PITCH + DECORATIVE FONT FAMILY |

#### ST\_PositiveCoordinate (Positive Coordinate)

This simple type represents a positive position or length in EMUs.

#### ST\_PositiveCoordinate32 (Positive Coordinate Point)

This simple type specifies the a positive coordinate point that has a maximum size of 32 bits.

#### ST\_PositiveFixedAngle (Positive Fixed Angle)

This simple type represents a positive angle in 60000ths of a degree. Range from [0, 360 degrees).

#### ST\_PositiveFixedPercentage (Positive Fixed Percentage)

This simple type specifies that its contents will contain a positive percentage value from zero through one hundred percent. See the union's member types for details.

#### ST\_PositivePercentage (Positive Percentage Value with Sign)

This simple type specifies that its contents will contain a positive percentage value. See the union's member types for details.

#### ST\_PresetCameraType (Preset Camera Type)

These enumeration values represent different algorithmic methods for setting all camera properties, including position. The following example images below are all based off the following shape:

|  |  |  |
| --- | --- | --- |
| **Enumeration Value** | **Description** | |
| isometricBottomDown (Isometric Bottom Down) | [*Example*: Consider the following example of the camera preset type: | |
| isometricBottomUp (Isometric Bottom Up) | [*Example*: Consider the following example of the camera preset type: | |
| isometricLeftDown (Isometric Left Down) | [*Example*: Consider the following example of the camera preset type: | |
| isometricLeftUp (Isometric Left Up) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis1Left (Isometric Off Axis 1 Left) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis1Right (Isometric Off Axis 1 Right) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis1Top (Isometric Off Axis 1 Top) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis2Left (Isometric Off Axis 2 Left) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis2Right (Isometric Off Axis 2 Right) |  | |
| isometricOffAxis2Top (Isometric Off Axis 2 Top) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis3Bottom (Isometric Off Axis 3 Bottom) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis3Left (Isometric Off Axis 3 Left) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis3Right (Isometric Off Axis 3 Right) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis4Bottom (Isometric Off Axis 4 Bottom) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis4Left (Isometric Off Axis 4 Left) | [*Example*: Consider the following example of the camera preset type: | |
| isometricOffAxis4Right (Isometric Off Axis 4 Right) | [*Example*: Consider the following example of the camera preset type: | |
| isometricRightDown (Isometric Right Down) | [*Example*: Consider the following example of the camera preset type: | |
| isometricRightUp (Isometric Right Up) | [*Example*: Consider the following example of the camera preset type: | |
| isometricTopDown (Isometric Top Down) | [*Example*: Consider the following example of the camera preset type: | |
| isometricTopUp (Isometric Top Up) | [*Example*: Consider the following example of the camera preset type: | |
| legacyObliqueBottom (Legacy Oblique Bottom) | [*Example*: Consider the following example of the camera preset type: | |
| legacyObliqueBottomLeft (Legacy Oblique Bottom | [*Example*: Consider the following example of the camera preset type: | |
| legacyObliqueBottomRight (Legacy Oblique Bottom Right) | [*Example*: Consider the following example of the camera preset type: | |
| legacyObliqueFront (Legacy Oblique Front) | [*Example*: Consider the following example of the | |
| legacyObliqueLeft (Legacy Oblique Left) | [*Example*: Consider the following example of the camera preset type: | |
| legacyObliqueRight (Legacy Oblique Right) | [*Example*: Consider the following example of the camera preset type: | |
| legacyObliqueTop (Legacy Oblique Top) | [*Example*: Consider the following example of the camera preset type: | |
| legacyObliqueTopLeft (Legacy Oblique Top Left) | [*Example*: Consider the following example of the camera preset type: | |
| legacyObliqueTopRight (Legacy Oblique Top Right) | [*Example*: Consider the following example of the camera preset type: | |
| legacyPerspectiveBottom (Legacy Perspective Bottom) | [*Example*: Consider the following example of the camera preset type: | |
| legacyPerspectiveBottomLeft (Legacy Perspective Bottom Left) | [*Example*: Consider the following example of the camera preset type: | |
| legacyPerspectiveBottomRight (Legacy Perspective Bottom Right) | [*Example*: Consider the following example of the camera preset type: | |
| legacyPerspectiveFront (Legacy Perspective Front) | | [*Example*: Consider the following example of the camera preset type: |
| legacyPerspectiveLeft (Legacy Perspective Left) | | [*Example*: Consider the following example of the camera preset type: |
| legacyPerspectiveRight (Legacy Perspective Right) | | [*Example*: Consider the following example of the camera preset type: |
| legacyPerspectiveTop (Legacy Perspective Top) | | [*Example*: Consider the following example of the camera preset type: |
| legacyPerspectiveTopLeft (Legacy Perspective Top Left) | | [*Example*: Consider the following example of the camera preset type: |
| legacyPerspectiveTopRight (Legacy Perspective Top Right) | | [*Example*: Consider the following example of the camera preset type: |
| obliqueBottom (Oblique Bottom) | | [*Example*: Consider the following example of the camera preset type: |
| obliqueBottomLeft (Oblique Bottom Left) | | [*Example*: Consider the following example of the camera preset type: |
| obliqueBottomRight (Oblique Bottom Right) | | [*Example*: Consider the following example of the camera preset type: |
| obliqueLeft (Oblique Left) | | [*Example*: Consider the following example of the camera preset type: |
| obliqueRight (Oblique Right) | | [*Example*: Consider the following example of the camera preset type: |
| obliqueTop (Oblique Top) | | [*Example*: Consider the following example of the camera preset type: |
| obliqueTopLeft (Oblique Top Left) | | [*Example*: Consider the following example of the camera preset type: |
| obliqueTopRight (Oblique Top Right) | | [*Example*: Consider the following example of the camera preset type: |
| orthographicFront (Orthographic Front) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveAbove (Orthographic Above) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveAboveLeftFacing (Perspective Above Left Facing) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveAboveRightFacing (Perspective Above Right Facing) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveBelow (Perspective Below) | | [*Example*: Consider the following example of the |
| perspectiveContrastingLeftFacing (Perspective Contrasting Left Facing) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveContrastingRightFacing (Perspective Contrasting Right Facing) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveFront (Perspective Front) | | [*Example*: Consider the following example of the |
| perspectiveHeroicExtremeLeftFacing (Perspective Heroic Extreme Left Facing) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveHeroicExtremeRightFacing (Perspective Heroic Extreme Right Facing) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveHeroicLeftFacing (Perspective Heroic Left Facing) | | [*Example*: Consider the following example of the |
| perspectiveHeroicRightFacing (Perspective Heroic Right Facing) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveLeft (Perspective Left) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveRelaxed (Perspective Relaxed) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveRelaxedModerately (Perspective Relaxed Moderately) | | [*Example*: Consider the following example of the camera preset type: |
| perspectiveRight (Perspective Right) | | [*Example*: Consider the following example of the camera preset type: |

#### ST\_PresetColorVal (Preset Color Value)

This simple type represents a preset color value.

#### ST\_PresetLineDashVal (Preset Line Dash Value)

This simple type represents preset line dash values. The description for each style shows an illustration of the line style. Each style also contains a precise binary representation of the repeating dash style. Each 1 corresponds to a line segment of the same length as the line width, and each 0 corresponds to a space of the same length as the line width.

#### ST\_PresetMaterialType (Preset Material Type)

Describes surface appearance of a shape. The material type combines with lighting characteristics to create the final look and feel of a shape. The set of material properties which can be combined together to create the presets below consist of the following characteristics:

#### ST\_PresetPatternVal (Preset Pattern Value)

This simple type indicates a preset type of pattern fill. The description of each value contains an illustration of the fill type.

#### ST\_PresetShadowVal (Preset Shadow Type)

This simple type indicates one of 20 preset shadow types. Each enumeration value description illustrates the type of shadow represented by the value. Each description contains the parameters to the outer shadow effect represented by the preset, in addition to those attributes common to all prstShdw effects.

#### ST\_RectAlignment (Rectangle Alignments)

This simple type describes how to position two rectangles relative to each other.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Rectangle Alignment Enum ( Bottom )) | Bottom |
| bl (Rectangle Alignment Enum ( Bottom Left )) | Bottom Left |
| br (Rectangle Alignment Enum ( Bottom Right )) | Bottom Right |
| ctr (Rectangle Alignment Enum ( Center )) | Center |
| l (Rectangle Alignment Enum ( Left )) | Left |
| r (Rectangle Alignment Enum ( Right )) | Right |
| t (Rectangle Alignment Enum ( Top )) | Top |
| tl (Rectangle Alignment Enum ( Top Left )) | Top Left |
| tr (Rectangle Alignment Enum ( Top Right )) | Top Right |

#### ST\_SchemeColorVal (Scheme Color)

This simple type represents a scheme color value.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| accent1 (Accent Color 1) | Extra scheme color 1 |
| accent2 (Accent Color 2) | Extra scheme color 2 |
| accent3 (Accent Color 3) | Extra scheme color 3 |
| accent4 (Accent Color 4) | Extra scheme color 4 |
| accent5 (Accent Color 5) | Extra scheme color 5 |
| accent6 (Accent Color 6) | Extra scheme color 6 |
| bg1 (Background Color 1) | Semantic background color |
| bg2 (Background Color 2) | Semantic additional background color |
| dk1 (Dark Color 1) | Main dark color 1 |
| dk2 (Dark Color 2) | Main dark color 2 |
| folHlink (Followed Hyperlink Color) | Followed Hyperlink Color |
| hlink (Hyperlink Color) | Regular Hyperlink Color |
| lt1 (Light Color 1) | Main Light Color 1 |
| lt2 (Light Color 2) | Main Light Color 2 |
| phClr (Style Color) | A color used in theme definitions which means to use the color of the style. |
| tx1 (Text Color 1) | Semantic text color |
| tx2 (Text Color 2) | Semantic additional text color |

#### ST\_ShapeID (Shape ID)

Specifies the shape ID for legacy shape identification purposes.

#### ST\_ShapeType (Preset Shape Types)

This simple type specifies the preset shape geometry that is to be used for a shape. An enumeration of this simple type is used so that a custom geometry does not have to be specified but instead can be constructed automatically by the generating application. For each enumeration listed there is also the corresponding DrawingML code that would be used to construct this shape were it a custom geometry. Within the construction code for each of these preset shapes there are predefined guides that the generating application shall maintain for calculation purposes at all times. The necessary guides should have the following values. Formula syntax components are defined in the fmla attribute of the gd element (§20.1.9.11).

#### ST\_StyleMatrixColumnIndex (Style Matrix Column Index)

This simple type specifies an index into one of the lists in the style matrix specified by the fmtScheme element (bgFillStyleLst, effectStyleLst, fillStyleLst, or lnStyleLst).

#### ST\_SystemColorVal (System Color Value)

This simple type specifies a system color value. This color is based upon the value that this color currently has within the system on which the document is being viewed.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| 3dDkShadow (3D Dark System Color) | Specifies a Dark shadow color for three-dimensional display elements. |
| 3dLight (3D Light System Color) | Specifies a Light color for three-dimensional display elements (for edges facing the light source). |
| activeBorder (Active Border System Color) | Specifies an Active Window Border Color. |
| activeCaption (Active Caption System Color) | Specifies the active window title bar color. In particular the left side color in the color gradient of an active window's title bar if the gradient effect is enabled. |
| appWorkspace (Application Workspace System Color) | Specifies the Background color of multiple document interface (MDI) applications. |
| background (Background System Color) | Specifies the desktop background color. |
| btnFace (Button Face System Color) | Specifies the face color for three-dimensional display elements and for dialog box backgrounds. |
| btnHighlight (Button Highlight System Color) | Specifies the highlight color for three-dimensional display elements (for edges facing the light source). |
| btnShadow (Button Shadow System Color) | Specifies the shadow color for three-dimensional display elements (for edges facing away from the light source). |
| btnText (Button Text System Color) | Specifies the color of text on push buttons. |
| captionText (Caption Text System Color) | Specifies the color of text in the caption, size box, and scroll bar arrow box. |
| gradientActiveCaption (Gradient Active Caption System Color) | Specifies the right side color in the color gradient of an active window's title bar. |
| gradientInactiveCaption (Gradient Inactive Caption System Color) | Specifies the right side color in the color gradient of an inactive window's title bar. |
| grayText (Gray Text System Color) | Specifies a grayed (disabled) text. This color is set to 0 |
| highlight (Highlight System Color) | Specifies the color of Item(s) selected in a control. |
| highlightText (Highlight Text System Color) | Specifies the text color of item(s) selected in a control. |
| hotLight (Hot Light System Color) | Specifies the color for a hyperlink or hot-tracked item. |
| inactiveBorder (Inactive Border System Color) | Specifies the color of the Inactive window border. |
| inactiveCaption (Inactive Caption System Color) | Specifies the color of the Inactive window caption. Specifies the left side color in the color gradient of an inactive window's title bar if the gradient effect is enabled. |
| inactiveCaptionText (Inactive Caption Text System Color) | Specifies the color of text in an inactive caption. |
| infoBk (Info Back System Color) | Specifies the background color for tooltip controls. |
| infoText (Info Text System Color) | Specifies the text color for tooltip controls. |
| menu (Menu System Color) | Specifies the menu background color. |
| menuBar (Menu Bar System Color) | Specifies the background color for the menu bar when menus appear as flat menus. |
| menuHighlight (Menu Highlight System Color) | Specifies the color used to highlight menu items when the menu appears as a flat menu. |
| menuText (Menu Text System Color) | Specifies the color of Text in menus. |
| scrollBar (Scroll Bar System Color) | Specifies the scroll bar gray area color. |
| window (Window System Color) | Specifies window background color. |
| windowFrame (Window Frame System Color) | Specifies the window frame color. |
| windowText (Window Text System Color) | Specifies the color of text in windows. |

#### ST\_TextAlignType (Text Alignment Types)

This simple type specifies the text alignment types

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ctr (Text Alignment Enum ( Center )) | Align text in the center. |
| dist (Text Alignment Enum ( Distributed )) | Distributes the text words across an entire text line. |
| just (Text Alignment Enum ( Justified )) | Align text so that it is justified across the whole line. It is smart in the sense that it does not justify sentences which are short. |
| justLow (Text Alignment Enum ( Justified Low )) | Aligns the text with an adjusted kashida length for Arabic text. |
| l (Text Alignment Enum ( Left )) | Align text to the left margin. |
| r (Text Alignment Enum ( Right )) | Align text to the right margin. |
| thaiDist (Text Alignment Enum ( Thai Distributed )) | Distributes Thai text specially, because each character is treated as a word. |

#### ST\_TextAnchoringType (Text Anchoring Types)

This simple type specifies a list of available anchoring types for text.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Text Anchor Enum ( Bottom )) | Anchor the text at the bottom of the bounding rectangle. |
| ctr (Text Anchor Enum ( Center )) | Anchor the text at the middle of the bounding rectangle. |
| dist (Text Anchor Enum ( Distributed )) | Anchor the text so that it is distributed vertically. When text is horizontal, this spaces out the actual lines of text and is almost always identical in behavior to anchorJustified (special case: if only 1 line, then anchored in middle). When text is vertical, then it distributes the letters vertically. This is different than anchorJustified, because it always forces distribution of the words, even if there are only one or two words in a line. |
| just (Text Anchor Enum ( Justified )) | Anchor the text so that it is justified vertically. When text is horizontal, this spaces out the actual lines of text and is almost always identical in behavior to 'distrib' (special case: if only 1 line, then anchored at top). When text is vertical, then it justifies the letters vertically. This is different than anchorDistributed, because in some cases such as very little text in a line, it does not justify. |
| t (Text Anchoring Type Enum ( Top )) | Anchor the text at the top of the bounding rectangle. |

#### ST\_TextAutonumberScheme (Text Auto-number Schemes)

This simple type specifies a list of automatic numbering schemes.

|  |  |  |
| --- | --- | --- |
| **Enumeration Value** | **Description** | |
| alphaLcParenBoth (Autonumber Enum ( alphaLcParenBoth )) | (a), (b), (c), … | |
| alphaLcParenR (Autonumbering Enum ( alphaLcParenR )) | a), b), c), … | |
| alphaLcPeriod (Autonumbering Enum ( alphaLcPeriod | a., b., c., … | |
| alphaUcParenBoth (Autonumbering Enum ( alphaUcParenBoth )) | (A), (B), (C), … | |
| alphaUcParenR (Autonumbering Enum ( alphaUcParenR )) | A), B), C), … | |
| alphaUcPeriod (Autonumbering Enum ( alphaUcPeriod )) | A., B., C., … | |
| arabic1Minus (Autonumbering Enum ( arabic1Minus | Bidi Arabic 1 (AraAlpha) with ANSI minus symbol | |
| arabic2Minus (Autonumbering Enum ( arabic2Minus | Bidi Arabic 2 (AraAbjad) with ANSI minus symbol | |
| arabicDbPeriod (Autonumbering Enum ( arabicDbPeriod )) | Dbl-byte Arabic numbers w/ double-byte period | |
| arabicDbPlain (Autonumbering Enum ( arabicDbPlain | Dbl-byte Arabic numbers | |
| arabicParenBoth (Autonumbering Enum ( arabicParenBoth )) | (1), (2), (3), … | |
| arabicParenR (Autonumbering Enum ( arabicParenR )) | 1), 2), 3), … | |
| arabicPeriod (Autonumbering Enum ( arabicPeriod )) | 1., 2., 3., … | |
| arabicPlain (Autonumbering Enum ( arabicPlain )) | 1, 2, 3, … | |
| circleNumDbPlain (Autonumbering Enum ( circleNumDbPlain )) | Dbl-byte circle numbers (1-10 circle[0x2460-], 11- arabic numbers) | |
| circleNumWdBlackPlain (Autonumbering Enum ( circleNumWdBlackPlain )) | | Wingdings black circle numbers |
| circleNumWdWhitePlain (Autonumbering Enum ( circleNumWdWhitePlain )) | | Wingdings white circle numbers (0-10 circle[0x0080-], 11- arabic numbers) |
| ea1ChsPeriod (Autonumbering Enum ( ea1ChsPeriod | | EA: Simplified Chinese w/ single-byte period |
| ea1ChsPlain (Autonumbering Enum ( ea1ChsPlain )) | | EA: Simplified Chinese (TypeA 1-99, TypeC 100-) |
| ea1ChtPeriod (Autonumbering Enum ( ea1ChtPeriod | | EA: Traditional Chinese w/ single-byte period |
| ea1ChtPlain (Autonumbering Enum ( ea1ChtPlain )) | | EA: Traditional Chinese (TypeA 1-19, TypeC 20-) |
| ea1JpnChsDbPeriod (Autonumbering Enum ( ea1JpnChsDbPeriod )) | | EA: Japanese w/ double-byte period |
| ea1JpnKorPeriod (Autonumbering Enum ( ea1JpnKorPeriod )) | | EA: Japanese/Korean w/ single-byte period |
| ea1JpnKorPlain (Autonumbering Enum ( ea1JpnKorPlain )) | | EA: Japanese/Korean (TypeC 1-) |
| hebrew2Minus (Autonumbering Enum ( hebrew2Minus )) | | Bidi Hebrew 2 with ANSI minus symbol |
| hindiAlpha1Period (Autonumbering Enum ( hindiAlpha1Period )) | | Hindi alphabet period - consonants |
| hindiAlphaPeriod (Autonumbering Enum ( hindiAlphaPeriod )) | | Hindi alphabet period - vowels |
| hindiNumParenR (Autonumbering Enum ( hindiNumParenR )) | | Hindi numerical parentheses - right |
| hindiNumPeriod (Autonumbering Enum ( hindiNumPeriod )) | | Hindi numerical period |
| romanLcParenBoth (Autonumbering Enum ( romanLcParenBoth )) | | (i), (ii), (iii), … |
| romanLcParenR (Autonumbering Enum ( romanLcParenR )) | | i), ii), iii), … |
| romanLcPeriod (Autonumbering Enum ( romanLcPeriod )) | | i., ii., iii., … |
| romanUcParenBoth (Autonumbering Enum ( romanUcParenBoth )) | | (I), (II), (III), … |
| romanUcParenR (Autonumbering Enum ( romanUcParenR )) | | I), II), III), … |
| romanUcPeriod (Autonumbering Enum ( romanUcPeriod )) | | I., II., III., … |
| thaiAlphaParenBoth (Autonumbering Enum ( | | Thai alphabet parentheses - both |
| thaiAlphaParenR (Autonumbering Enum ( thaiAlphaParenR )) | | Thai alphabet parentheses - right |
| thaiAlphaPeriod (Autonumbering Enum ( thaiAlphaPeriod )) | | Thai alphabet period |
| thaiNumParenBoth (Autonumbering Enum ( thaiNumParenBoth )) | | Thai numerical parentheses - both |
| thaiNumParenR (Autonumbering Enum ( thaiNumParenR )) | | Thai numerical parentheses - right |
| thaiNumPeriod (Autonumbering Enum ( thaiNumPeriod )) | | Thai numerical period |

#### ST\_TextBulletSizePercent (Bullet Size Percentage)

This simple type specifies the range that the bullet percent can be. A bullet percent is the size of the bullet with respect to the text that should follow it.

#### ST\_TextBulletStartAtNum (Start Bullet At Number)

This simple type specifies the range that the start at number for a bullet's auto-numbering sequence can begin at. When the numbering is alphabetical, then the numbers map to the appropriate letter. 1->a, 2->b, etc. If the numbers go above 26, then the numbers begin to double up. For example, 27->aa and 53->aaa.

#### ST\_TextCapsType (Text Cap Types)

This simple type specifies the cap types of the text.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| all (Text Caps Enum ( All )) | Apply all caps on the text. All lower case letters are converted to upper case even though they are stored differently in the backing store. |
| none (Text Caps Enum ( None )) | The reason we cannot implicitly have noCaps be the scenario where capitalization is not specified is because not being specified implies deriving from a particular style and the user might want to override that and make some text not have a capitalization scheme even though the style says otherwise. |
| small (Text Caps Enum ( Small )) | Apply small caps to the text. All letters are converted to lower case. |

#### ST\_TextColumnCount (Text Column Count)

This simple type specifies the number of columns.

#### ST\_TextFontAlignType (Font Alignment Types)

This simple type specifies the different kinds of font alignment.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| auto (Font Alignment Enum ( Automatic )) | When the text flow is horizontal or simple vertical same as fontBaseline but for other vertical modes same as fontCenter. |
| b (Font Alignment Enum ( Bottom )) | The letters are anchored to the very bottom of a single line. This is different than the bottom baseline because of letters such as "g," "q," "y," etc. |
| base (Font Alignment Enum ( Baseline )) | The letters are anchored to the bottom baseline of a single line. |
| ctr (Font Alignment Enum ( Center )) | The letters are anchored between the two baselines of a single line. |
| t (Font Alignment Enum ( Top )) | The letters are anchored to the top baseline of a single line. |

#### ST\_TextFontScalePercentOrPercentString (Text Font Scale Percentage)

This simple type specifies that its contents will contain a text font scale percent percentage. See the union's member types for details.

#### ST\_TextFontSize (Text Font Size)

This simple type specifies the size of any text in hundredths of a point. Shall be at least 1 point.

#### ST\_TextHorzOverflowType (Text Horizontal Overflow Types)

This simple type specifies the text horizontal overflow types

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| clip (Text Horizontal Overflow Enum ( Clip )) | When a big character does not fit into a line, clip it at the proper horizontal overflow. |
| overflow (Text Horizontal Overflow Enum ( Overflow | When a big character does not fit into a line, allow a horizontal overflow. |

#### ST\_TextIndent (Text Indentation)

This simple type specifies the text indentation amount to be used.

#### ST\_TextIndentLevelType (Text Indent Level Type)

This simple type specifies the indent level type. We support list level 0 to 8, and we use -1 and -2 for outline mode levels that should only exist in memory.

#### ST\_TextMargin (Text Margin)

This simple type specifies the margin that is used and its corresponding size.

#### ST\_TextNonNegativePoint (Text Non-Negative Point)

This simple type specifies a non-negative font size in hundredths of a point. This is restricted to the range [0, 400000].

#### ST\_TextPoint (Text Point)

This simple type specifies a coordinate within the document. This can be used for measurements or spacing; its maximum size is +/- 4000 points.

#### ST\_TextPointUnqualified (Text Point)

This simple type specifies a font size in hundredths of a point. This is restricted to the range [-400000, 400000], i.e from -4000 pt to 4000 pt.

#### ST\_TextShapeType (Preset Text Shape Types)

This simple type specifies the preset text shape geometry that is to be used for a shape. An enumeration of this simple type is used so that a custom geometry does not have to be specified but instead can be constructed automatically by the generating application. For each enumeration listed there is also the corresponding DrawingML code that would be used to construct this shape were it a custom geometry. Within the construction code for each of these preset text shapes there are predefined guides that the generating application shall maintain for calculation purposes at all times. The necessary guides should have the following values. Formula syntax components are defined in the fmla attribute of the gd element (§20.1.9.11).

#### ST\_TextSpacingPercentOrPercentString (Text Spacing Percent)

This simple type specifies that its contents will contain a text font spacing percentage. See the union's member types for details.

#### ST\_TextSpacingPoint (Text Spacing Point)

This simple type specifies the Text Spacing that is used in terms of font point size.

#### ST\_TextStrikeType (Text Strike Type)

This simple type specifies the strike type.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| dblStrike (Text Strike Enum ( Double Strike )) | A double strikethrough applied on the text |
| noStrike (Text Strike Enum ( No Strike )) | No strike is applied to the text |
| sngStrike (Text Strike Enum ( Single Strike )) | A single strikethrough is applied to the text |

#### ST\_TextTabAlignType (Text Tab Alignment Types)

This simple type specifies the text tab alignment types.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ctr (Text Tab Alignment Enum ( Center )) | The text at this tab stop is center aligned. |
| dec (Text Tab Alignment Enum ( Decimal )) | At this tab stop, the decimals are lined up. From a user's point of view, the text here behaves as right aligned until the decimal, and then as left aligned after the decimal. |
| l (Text Tab Alignment Enum ( Left)) | The text at this tab stop is left aligned. |
| r (Text Tab Alignment Enum ( Right )) | The text at this tab stop is right aligned. |

#### ST\_TextTypeface (Text Typeface)

This simple type specifies the way we represent a font typeface.

#### ST\_TextUnderlineType (Text Underline Types)

This simple type specifies the text underline types that is used.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| dash (Text Underline Enum ( Dashed )) | Underline the text with a single, dashed line of normal thickness. |
| dashHeavy (Text Underline Enum ( Heavy Dashed )) | Underline the text with a single, dashed, thick line. |
| dashLong (Text Underline Enum ( Long Dashed )) | Underline the text with a single line consisting of long dashes of normal thickness. |
| dashLongHeavy (Text Underline Enum ( Heavy Long Dashed )) | Underline the text with a single line consisting of long, thick dashes. |
| dbl (Text Underline Enum ( Double )) | Underline the text with two lines of normal thickness. |
| dotDash (Text Underline Enum ( Dot Dash )) | Underline the text with a single line of normal thickness consisting of repeating dots and dashes. |
| dotDashHeavy (Text Underline Enum ( Heavy Dot Dash )) | Underline the text with a single, thick line consisting of repeating dots and dashes. |
| dotDotDash (Text Underline Enum ( Dot Dot Dash )) | Underline the text with a single line of normal thickness consisting of repeating two dots and dashes. |
| dotDotDashHeavy (Text Underline Enum ( Heavy Dot Dot Dash )) | Underline the text with a single, thick line consisting of repeating two dots and dashes. |
| dotted (Text Underline Enum ( Dotted )) | Underline the text with a single, dotted line of normal thickness. |
| dottedHeavy (Text Underline Enum ( Heavy Dotted )) | Underline the text with a single, thick, dotted line. |
| heavy (Text Underline Enum ( Heavy )) | Underline the text with a single, thick line. |
| none (Text Underline Enum ( None )) | The reason we cannot implicitly have noUnderline be the scenario where underline is not specified is because not being specified implies deriving from a particular style and the user might want to override that and make some text not be underlined even though the style says otherwise. |
| sng (Text Underline Enum ( Single )) | Underline the text with a single line of normal thickness. |
| wavy (Text Underline Enum ( Wavy )) | Underline the text with a single wavy line of normal thickness. |
| wavyDbl (Text Underline Enum ( Double Wavy )) | Underline the text with two wavy lines of normal thickness. |
| wavyHeavy (Text Underline Enum ( Heavy Wavy )) | Underline the text with a single, thick wavy line. |
| words (Text Underline Enum ( Words )) | Underline just the words and not the spaces between them. |

#### ST\_TextVerticalType (Vertical Text Types)

If there is vertical text, determines what kind of vertical text is going to be used.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| eaVert (Vertical Text Type Enum ( East Asian Vertical )) | A special version of vertical text, where some fonts are displayed as if rotated by 90 degrees while some fonts (mostly East Asian) are displayed vertical. |
| horz (Vertical Text Type Enum ( Horizontal )) | Horizontal text. This should be default. |
| mongolianVert (Vertical Text Type Enum ( Mongolian | A special version of vertical text, where some fonts are displayed as if rotated by 90 degrees while some fonts |
| vert (Vertical Text Type Enum ( Vertical )) | Determines if all of the text is vertical orientation (each line is 90 degrees rotated clockwise, so it goes from top to bottom; each next line is to the left from the previous one). |
| vert270 (Vertical Text Type Enum ( Vertical 270 )) | Determines if all of the text is vertical orientation (each line is 270 degrees rotated clockwise, so it goes from bottom to top; each next line is to the right from the previous one). |
| wordArtVert (Vertical Text Type Enum ( WordArt | Determines if all of the text is vertical ("one letter on top of another"). |
| wordArtVertRtl (Vertical WordArt Right to Left) | Specifies that vertical WordArt should be shown from right to left rather than left to right. |

#### ST\_TextVertOverflowType (Text Vertical Overflow)

This simple type specifies the text vertical overflow.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| clip (Text Overflow Enum ( Clip )) | Pay attention to top and bottom barriers. Provide no indication that there is text which is not visible. |
| ellipsis (Text Overflow Enum ( Ellipsis )) | Pay attention to top and bottom barriers. Use an ellipsis to denote that there is text which is not visible. |
| overflow (Text Overflow Enum ( Overflow )) | Overflow the text and pay no attention to top and bottom barriers. |

#### ST\_TextWrappingType (Text Wrapping Types)

Text Wrapping Types

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| none (Text Wrapping Type Enum ( None )) | No wrapping occurs on this text body. Words spill out without paying attention to the bounding rectangle boundaries. |
| square (Text Wrapping Type Enum ( Square )) | Determines whether we wrap words within the bounding rectangle. |

#### ST\_TileFlipMode (Tile Flip Mode)

This simple type indicates whether/how to flip the contents of a tile region when using it to fill a larger fill region.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| none (None) | Tiles are not flipped. |
| x (Horizontal) | Tiles are flipped horizontally. |
| xy (Horizontal and Vertical) | Tiles are flipped both horizontically and vertically. |
| y (Vertical) | Tiles are flipped vertically. |

#### ST\_TextBulletSize (Bullet Size Percentage)

This simple type specifies the range that the bullet percent can be. A bullet percent is the size of the bullet with respect to the text that should follow it, with a minimum size of 25% and maximum size of 400%.

## DrawingML - Picture

These elements encompass the definition of pictures within the DrawingML framework. While pictures are in many ways very similar to shapes they have specific properties that are unique in order to optimize for picturespecific scenarios. Some of these properties include Fill behavior, Border behavior and Resize behavior.

### Elements

The following section defines the Picture portion of the DrawingML framework.

#### blipFill (Picture Fill)

This element specifies the type of picture fill that the picture object has. Because a picture has a picture fill already by default, it is possible to have two fills specified for a picture object. An example of this is shown below.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dpi (DPI Setting) | Specifies the DPI (dots per inch) used to calculate the size of the blip. If not present or zero, the DPI in the blip is used. |
| rotWithShape | Specifies that the fill should rotate with the shape. That is, when the shape that has been filled with a picture and the containing shape (say a rectangle) is transformed with a rotation then the fill is transformed with the same rotation. |

#### cNvPicPr (Non-Visual Picture Drawing Properties)

This element specifies the non-visual properties for the picture canvas. These properties are to be used by the generating application to determine how certain properties are to be changed for the picture object in question.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| preferRelativeResi ze (Relative Resize | Specifies if the user interface should show the resizing of the picture based on the picture's current size or its original size. If this attribute is set to true, then scaling is relative to the original picture size as opposed to the current picture size. |

#### cNvPr (Non-Visual Drawing Properties)

This element specifies non-visual canvas properties. This allows for additional information that does not affect the appearance of the picture to be stored.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| descr (Alternative | Specifies alternative text for the current DrawingML object, for use by assistive technologies or applications which do not display the current object. | |
| hidden (Hidden) | Specifies whether this DrawingML object is displayed. When a DrawingML object is displayed within a document, that object can be hidden (i.e., present, but not visible). This attribute determines whether the object is rendered or made hidden. [*Note*: An application can have settings which allow this object to be viewed. *end note*] | |
| id (Unique | | Specifies a unique identifier for the current DrawingML object within the current document. This ID can be used to assist in uniquely identifying this object so that it can be referred to by other parts of the document. |
| name (Name) | | Specifies the name of the object. [*Note*: Typically, this is used to store the original file name of a picture object. *end note*] |
| title (Title) | | Specifies the title (caption) of the current DrawingML object. |

#### nvPicPr (Non-Visual Picture Properties)

This element specifies the non visual properties for a picture. This allows for additional information that does not affect the appearance of the picture to be stored.

#### pic (Picture)

This element specifies the existence of a picture object within the document.

#### spPr (Shape Properties)

This element specifies the visual shape properties that can be applied to a picture. These are the same properties that are allowed to describe the visual properties of a shape but are used here to describe the visual appearance of a picture within a document. This allows for a picture to have both the properties of a shape as well as picture specific properties that are allowed under the pic element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and | Specifies that the picture should be rendered using only black and white coloring. That is the coloring information for the picture should be converted to either black or white when rendering the picture. |

## DrawingML - Locked Canvas

Within a DrawingML object, a *locked canvas* allows DrawingML objects to be placed in a format where they can be viewed but not edited by the hosting application. This allows DrawingML objects not supported by an application to be included and viewed in applications where they cannot be edited.

### Basics

This section specifies a locked canvas within the basic DrawingML framework.

#### lockedCanvas (Locked Canvas Container)

The locked canvas element acts as a container for more advanced drawing objects. The notion of a locked canvas comes from the fact that the generating application opening the file cannot create this object and can thus not perform edits either. Thus the drawing object is locked from all UI adjustments that would normally take place.

## DrawingML - WordprocessingML Drawing

Within a WordprocessingML document, it is possible to include graphical DrawingML objects:

### Elements

The following elements define the contents of the WordprocessingML Drawing namespace:

#### align (Relative Horizontal Alignment)

This element specifies how a DrawingML object shall be horizontally aligned relative to the horizontal alignment base defined by the parent element. Once an alignment base is defined, this element shall determine how the DrawingML object shall be aligned relative to that location.

#### align (Relative Vertical Alignment)

This element specifies how a DrawingML object shall be vertically aligned relative to the vertical alignment base defined by the parent element. Once an alignment base is defined, this element shall determine how the DrawingML object shall be aligned relative to that location.

#### anchor (Anchor for Floating DrawingML Object)

This element specifies that the DrawingML object located at this position in the document is a floating object. Within a WordprocessingML document, drawing objects can exist in two states:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Attributes** | | | | **Description** | | |
| allowOverlap | | | | Specifies whether a DrawingML object which intersects another DrawingML object at display time is allowed to overlap the contents of the other DrawingML object. If a DrawingML object cannot overlap other DrawingML object, it shall be repositioned when displayed to prevent this overlap as needed. | | |
| behindDoc (Display | | | | Specifies whether this floating DrawingML object is displayed behind the text of the document when the document is displayed. When a DrawingML object is displayed within a WordprocessingML document, that object can intersect with text in the document. This attribute shall determine whether the text or the object is rendered on top in case of overlapping. | | |
| distB (Distance From Text on | | | | Specifies the minimum distance which shall be maintained between the bottom edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | | |
| distL (Distance From Text on Left | | | | Specifies the minimum distance which shall be maintained between the left edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | | |
| distR (Distance From Text on Right | | | | Specifies the minimum distance which shall be maintained between the right edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | | |
| distT (Distance From Text on Top | | | | Specifies the minimum distance which shall be maintained between the top edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | | |
| hidden (Hidden) | | | | Specifies whether this floating DrawingML object is displayed. When a DrawingML object is displayed within a WordprocessingML document, that object can be hidden (i.e. present, but not visible). This attribute shall determine whether the object is rendered or made hidden. [*Note*: An application can have settings which allow this object to be viewed. *end note*] | | |
| layoutInCell (Layout In Table | | | | Specifies how this DrawingML object behaves when its anchor is located in a table cell; and its specified position would cause it to intersect with a table cell displayed in the document. That behavior shall be as follows: | | |
| locked (Lock Anchor) | Specifies that the anchor location for this object shall not be modified at runtime when an application edits the contents of this document. [*Guidance*: An application might have automatic behaviors which reposition the anchor for a DrawingML object based on user interaction - for example, moving it from one page to another as needed. This element must tell applications not to perform any such behaviors. *end guidance*] | | |
| relativeHeight (Relative Z-Ordering | Specifies the relative Z-ordering of all DrawingML objects in this document. Each floating DrawingML object shall have a Z-ordering value, which determines which object is displayed when any two objects intersect. Higher values shall indicate higher Z-order; lower values shall indicate lower Z-order. | | |
| simplePos (Page Positioning) | Specifies that this object shall be positioned using the positioning information in the simplePos child element (§20.4.2.13). This positioning, when specified, positions the object on the page by placing its top left point at the x-y coordinates specified by that element. | | |

#### cNvGraphicFramePr (Common DrawingML Non-Visual Properties)

This element specifies common non-visual DrawingML object properties for the parent DrawingML object. These properties are specified as child elements of this element.

#### docPr (Drawing Object Non-Visual Properties)

This element specifies non-visual object properties for the parent DrawingML object. These properties are specified as child elements of this element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| descr (Alternative | Specifies alternative text for the current DrawingML object, for use by assistive technologies or applications which do not display the current object. |
| hidden (Hidden) | Specifies whether this DrawingML object is displayed. When a DrawingML object is displayed within a document, that object can be hidden (i.e., present, but not visible). This attribute determines whether the object is rendered or made hidden. [*Note*: An application can have settings which allow this object to be viewed. *end note*] |
| id (Unique | Specifies a unique identifier for the current DrawingML object within the current document. This ID can be used to assist in uniquely identifying this object so that it can be referred to by other parts of the document. |
| name (Name) | Specifies the name of the object. [*Note*: Typically, this is used to store the original file name of a picture object. *end note*] |
| title (Title) | Specifies the title (caption) of the current DrawingML object. |

#### effectExtent (Object Extents Including Effects)

This element specifies the additional extent which shall be added to each edge of the image (top, bottom, left, right) in order to compensate for any drawing effects applied to the DrawingML object.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | | **Description** | |
| b (Additional Extent on Bottom Edge) | | Specifies the additional length, in EMUs, which shall be added to the bottom edge of the DrawingML object to determine its actual bottom edge including effects. | |
| l (Additional Extent on Left Edge) | | Specifies the additional length, in EMUs, which shall be added to the bottom edge of the DrawingML object to determine its actual bottom edge including effects. | |
| r (Additional Extent on Right Edge) | | Specifies the additional length, in EMUs, which shall be added to the bottom edge of the DrawingML object to determine its actual bottom edge including effects. | |
| t (Additional Extent on Top Edge) | | Specifies the additional length, in EMUs, which shall be added to the bottom edge of the DrawingML object to determine its actual bottom edge including effects. | |

#### extent (Drawing Object Size)

This element specifies the extents of the parent DrawingML object within the document (i.e. its final height and width).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| cx (Extent Length) | Specifies the length of the extents rectangle in EMUs. This rectangle shall dictate the size of the object as displayed (the result of any scaling to the original object). |
| cy (Extent Width) | Specifies the width of the extents rectangle in EMUs. This rectangle shall dictate the size of the object as displayed (the result of any scaling to the original object). |

#### inline (Inline DrawingML Object)

This element specifies that the DrawingML object located at this position in the document is an inline object.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | | **Description** | |
| distB (Distance From Text on | | Specifies the minimum distance which shall be maintained between the bottom edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | |
| distL (Distance From Text on Left | | Specifies the minimum distance which shall be maintained between the left edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | |
| distR (Distance From Text on Right | | Specifies the minimum distance which shall be maintained between the right edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | |
| distT (Distance From Text on Top | | Specifies the minimum distance which shall be maintained between the top edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | |

#### lineTo (Wrapping Polygon Line End Position)

This element specifies a single point on the wrapping polygon for a DrawingML object. This point shall be the termination of the edge of the wrapping polygon started by the previous start or lineTo element in document order, and shall be the origin of the next edge on the same polygon.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| x (X-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |
| y (Y-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |

#### positionH (Horizontal Positioning)

This element specifies the horizontal positioning of a floating DrawingML object within a WordprocessingML document. This positioning is specified in two parts:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| relativeFrom (Horizontal Position | Specifies the base to which the relative horizontal positioning of this object shall be calculated. |

#### positionV (Vertical Positioning)

This element specifies the vertical positioning of a floating DrawingML object within a WordprocessingML document. This positioning is specified in two parts:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| relativeFrom (Vertical Position | Specifies the base to which the relative vertical positioning of this object shall be calculated. |

#### posOffset (Absolute Position Offset)

This element specifies an absolute measurement for the positioning of a floating DrawingML object within a WordprocessingML document. This measurement shall be calculated relative to the top left edge of the positioning base specified by the parent element's relativeFrom attribute.

#### simplePos (Simple Positioning Coordinates)

This element specifies the coordinates at which a DrawingML object shall be positioned relative to the top-left edge of its page, when the simplePos attribute is specified on the anchor element (§20.4.2.3).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| x (X-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |
| y (Y-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |

#### start (Wrapping Polygon Start)

This element specifies the starting point on the wrapping polygon for a DrawingML object. This point shall be the start and termination of the wrapping polygon for the parent object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| x (X-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |
| y (Y-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |

#### wrapNone (No Text Wrapping)

This element specifies that the parent DrawingML object shall not cause any text wrapping within the contents of the host WordprocessingML document based on its display location. In effect, this setting shall place the object in one of two locations:

#### wrapPolygon (Wrapping Polygon)

This element specifies the wrapping polygon which shall be used to determine the extents to which text can wrap around the specified object in the document. This polygon shall be defined by the following:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| edited (Wrapping | Specifies that the wrap points for the wrapping polygon have been edited, and the |
| Points Modified) | resulting extents shall be recalculated to compensate when the document is next opened. |

#### wrapSquare (Square Wrapping)

This element specifies that text shall wrap around a virtual rectangle bounding this object. The bounds of the wrapping rectangle shall be dictated by the extents including the addition of the effectExtent element as a child of this element (if present) or the effectExtent present on the parent element.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | | **Description** | |
| distB (Distance From Text on | | Specifies the minimum distance which shall be maintained between the bottom edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | |
| distL (Distance From Text on Left | | Specifies the minimum distance which shall be maintained between the left edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | |
| distR (Distance From Text on Right | | Specifies the minimum distance which shall be maintained between the right edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | |
| distT (Distance From Text (Top)) | | Specifies the minimum distance which shall be maintained between the top edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | |
| wrapText (Text Wrapping Location) | | Specifies how text shall wrap around the object's left and right sides. | |

#### wrapThrough (Through Wrapping)

This element specifies that text shall wrap around the wrapping polygon bounding this object as defined by the child wrapPolygon element. When this element specifies a wrapping polygon, it shall allow text to wrap within the object's maximum left and right extents.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| distL (Distance From Text on Left | Specifies the minimum distance which shall be maintained between the left edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. |
| distR (Distance From Text on Right | Specifies the minimum distance which shall be maintained between the right edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. |
| wrapText (Text Wrapping Location) | Specifies how text shall wrap around the object's left and right sides. |

#### wrapTight (Tight Wrapping)

This element specifies that text shall wrap around the wrapping polygon bounding this object as defined by the child wrapPolygon element. When this element specifies a wrapping polygon, it shall not allow text to wrap within the object's maximum left and right extents.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | | **Description** | |
| distL (Distance From Test on Left | | Specifies the minimum distance which shall be maintained between the left edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | |
| distR (Distance From Text on Right | | Specifies the minimum distance which shall be maintained between the right edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. | |
| wrapText (Text Wrapping Location) | | Specifies how text shall wrap around the object's left and right sides. | |

#### wrapTopAndBottom (Top and Bottom Wrapping)

This element specifies that text shall wrap around the top and bottom of this object, but not its left or right edges.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| distB (Distance From Text on | Specifies the minimum distance which shall be maintained between the bottom edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. |
| distT (Distance From Text on Top | Specifies the minimum distance which shall be maintained between the top edge of this drawing object and any subsequent text within the document when this graphical object is displayed within the document's contents. |

#### bg (Background Formatting)

This element defines formatting that can be applied to the background shape of the document. The background shape can hold formatting options just as a normal shape can hold within DrawingML.

#### bodyPr (Body Properties)

This element defines the body properties for the text body within a shape.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | | **Description** | |
| anchor (Anchor) | | Specifies the anchoring position of the txBody within the shape. If this attribute is omitted, then a value of t, or top is implied. | |
| anchorCtr (Anchor Center) | | Specifies the centering of the text box. The way it works fundamentally is to determine the smallest possible "bounds box" for the text and then to center that "bounds box" accordingly. This is different than paragraph alignment, which aligns the text within the "bounds box" for the text. This flag is compatible with all of the different kinds of anchoring. If this attribute is omitted, then a value of 0 or false is implied. | |
| bIns (Bottom Inset) | | Specifies the bottom inset of the bounding rectangle. Insets are used just as internal margins for text boxes within shapes. If this attribute is omitted, a value of 45720 or 0.05 inches is implied. | |
| compatLnSpc | | Specifies that the line spacing for this text body is decided in a simplistic manner using the font scene. If this attribute is omitted, a value of 0 or false is implied. | |
| forceAA (Force Anti-Alias) | | Forces the text to be rendered anti-aliased regardless of the font size. Certain fonts can appear grainy around their edges unless they are anti-aliased. Therefore this attribute allows for the specifying of which bodies of text should always be anti-aliased and which ones should not. If this attribute is omitted, then a value of 0 or false is implied. | |
| fromWordArt | | Specifies that text within this textbox is converted text from a WordArt object. This is more of a backwards compatibility attribute that is useful to the application from a tracking perspective. WordArt was the former way to apply text effects and therefore this attribute is useful in document conversion scenarios. If this attribute is omitted, then a value of 0 or false is implied. | |
| horzOverflow (Text | | Determines whether the text can flow out of the bounding box horizontally. This is used to determine what happens in the event that the text within a shape is too large for the bounding box it is contained within. If this attribute is omitted, then a value of overflow is implied. | |
| lIns (Left Inset) | | Specifies the left inset of the bounding rectangle. Insets are used just as internal margins for text boxes within shapes. If this attribute is omitted, then a value of 91440 or 0.1 inches is implied. | |
| numCol (Number of Columns) | | Specifies the number of columns of text in the bounding rectangle. When applied to a text run this property takes the width of the bounding box for the text and divides it by the number of columns specified. These columns are then treated as overflow containers in that when the previous column has been filled with text the next column acts as the repository for additional text. When all columns have been filled and text still remains then the overflow properties set for this text body are used and the text is reflowed to make room for additional text. If this attribute is omitted, then a value of 1 is implied. | |
| rIns (Right Inset) | | Specifies the right inset of the bounding rectangle. Insets are used just as internal margins for text boxes within shapes. If this attribute is omitted, then a value of 91440 or 0.1 inches is implied. | |
| rot (Rotation) | | Specifies the rotation that is being applied to the text within the bounding box. If it not specified, the rotation of the accompanying shape is used. If it is specified, then this is applied independently from the shape. That is the shape can have a rotation applied in addition to the text itself having a rotation applied to it. If this attribute is omitted, then a value of 0, is implied. | |
| rtlCol (Columns Right-To-Left) | | Specifies whether columns are used in a right-to-left or left-to-right order. The usage of this attribute only sets the column order that is used to determine which column overflow text should go to next. If this attribute is omitted, then a value of 0 or falseis implied in which case text starts in the leftmost column and flow to the right. | |
| spcCol (Space Between Columns) | | Specifies the space between text columns in the text area. This should only apply when there is more than 1 column present. If this attribute is omitted, then a value of 0 is implied. | |
| spcFirstLastPara (Paragraph Spacing) | | Specifies whether the before and after paragraph spacing defined by the user is to be respected. While the spacing between paragraphs is helpful, it is additionally useful to be able to set a flag as to whether this spacing is to be followed at the edges of the text body, in other words the first and last paragraphs in the text body. More precisely since this is a text body level property it should only effect the before paragraph spacing of the first paragraph and the after paragraph spacing of the last paragraph for a given text body. If this attribute is omitted, then a value of 0, or false is implied. | |
| tIns (Top Inset) | | Specifies the top inset of the bounding rectangle. Insets are used just as internal margins for text boxes within shapes. If this attribute is omitted, then a value of 45720 or 0.05 inches is implied. | |
| upright (Text Upright) | | Specifies whether text should remain upright, regardless of the transform applied to it | |
| vert (Vertical Text) | | Determines if the text within the given text body should be displayed vertically. If this attribute is omitted, then a value of horz, or no vertical text is implied. | |
| vertOverflow (Text Vertical Overflow) | | Determines whether the text can flow out of the bounding box vertically. This is used to determine what happens in the event that the text within a shape is too large for the bounding box it is contained within. If this attribute is omitted, then a value of overflow is implied. | |
| wrap (Text Wrapping Type) | | Specifies the wrapping options to be used for this text body. If this attribute is omitted, then a value of square is implied which wraps the text using the bounding text box. | |

#### cNvCnPr (Non-Visual Connector Shape Drawing Properties)

This element specifies the non-visual drawing properties specific to a connector shape. This includes information specifying the shapes to which the connector shape is connected.

#### cNvContentPartPr (Non-Visual Content Part Drawing Properties)

This element specifies the non-visual drawing properties for a content part. This allows for additional information that does not affect the appearance of the content part to be stored.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| isComment (Is a | Specifies whether the content part is a comment or an annotation. If true, it is a comment; otherwise, it is a general annotation. |

#### cNvFrPr (Non-Visual Graphic Frame Drawing Properties)

This element specifies the non-visual drawing properties for a graphic frame. These non-visual properties are properties that the generating application would utilize when rendering.

#### cNvGrpSpPr (Non-Visual Group Shape Drawing Properties)

This element specifies the non-visual drawing properties for a group shape. These non-visual properties are properties that the generating application would utilize when rendering.

#### cNvPr (Non-Visual Drawing Properties)

This element specifies non-visual canvas properties. This allows for additional information that does not affect the appearance of the picture to be stored.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| descr (Alternative | Specifies alternative text for the current DrawingML object, for use by assistive technologies or applications that do not display the current object. |
| hidden (Hidden) | Specifies whether this DrawingML object is displayed. When a DrawingML object is displayed within a document, that object can be hidden (i.e., present, but not visible). This attribute determines whether the object is rendered or made hidden. [*Note*: An application can have settings which allow this object to be viewed. *end note*] |
| id (Unique | Specifies a unique identifier for the current DrawingML object within the current document. This ID can be used to assist in uniquely identifying this object so that it can be referred to by other parts of the document. |
| name (Name) | Specifies the name of the object. [*Note*: Typically, this is used to store the original file name of a picture object. *end note*] |
| title (Title) | Specifies the title (caption) of the current DrawingML object. |

#### cNvSpPr (Non-Visual Drawing Properties for a Shape)

This element specifies the non-visual drawing properties for a shape. These properties are to be used by the generating application to determine how the shape should be dealt with.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| txBox (Text Box) | Specifies that the corresponding shape is a text box and thus should be treated as such by the generating application. If this attribute is omitted then it is assumed that the corresponding shape is not specifically a text box. |

#### contentPart (Content Part)

This element specifies a reference to XML content in a format not defined by ECMA-376. [*Note*: This part allows the native use of other commonly used interchange formats, such as:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and White Mode) | Specifies how to interpret color information contained within a content part to achieve a color, black and white, or grayscale rendering of the content part. This attribute specifies only the rendering mode applied to the content part; it does not affect how the actual color information is persisted. |
| id (Relationship to | Specifies the relationship ID to a specified part. |

#### extLst (Extension List)

This element specifies an extension list, within which all future extensions are defined within ext elements.

#### graphicFrame (Graphical object container)

This element specifies a container for a graphical object in WordprocessingML.

#### grpSp (Group Shape)

This element specifies a group shape that represents many shapes grouped together. This shape is to be treated just as if it were a regular shape but instead of being described by a single geometry it is made up of all the shape geometries encompassed within it. Within a group shape each of the shapes that make up the group are specified just as they normally would. The idea behind grouping elements however is that a single transform can apply to many shapes at the same time.

#### grpSpPr (Group Shape Properties)

This element specifies the properties that are to be common across all of the shapes within the corresponding group. If there are any conflicting properties within the group shape properties and the individual shape properties then the individual shape properties should take precedence.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| bwMode (Black and White Mode) | | Specifies that the group shape should be rendered using only black and white coloring. That is the coloring information for the group shape should be converted to either black or white when rendering the corresponding shapes. |

#### linkedTxbx (Textual contents of shape)

This element specifies the textual contents of a shape that is not the first in the series of shapes for the same text box story.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (ID) | Specifies the identity of the text box story begun by a txbx element. This value shall be unique across a document for each txbx element. |
| seq (sequence index) | Specifies the position of the owning shape in the given text box story. |

#### spPr (Shape Properties)

This element specifies the visual shape properties that can be applied to a shape. These properties include the shape fill, outline, geometry, effects, and 3D orientation.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and | Specifies that the picture should be rendered using only black and white coloring. That is the coloring information for the picture should be converted to either black or white when rendering the picture. |

#### style (Shape Style)

This element specifies the style information for a shape. This is used to define a shape's appearance in terms of the preset styles defined by the style matrix for the theme.

#### txbx (Textual contents of shape)

This element specifies the textual contents of a shape which is the first in the series of shapes for the same text box story. This element shall be present only in the CT\_WordprocessingShape element that is the first in a series of CT\_WordprocessingShape elements that refer to the same text box story.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (ID) | Specifies the identity of the text box story begun by a txbx element. This value shall be unique across a document for each txbx element. |

#### txbxContent (Rich Text Box Content Container)

This element specifies that its contents shall be any rich WordprocessingML content, and that this content is the rich contents of a drawing object defined using DrawingML syntax.

#### wgp (WordprocessingML Shape Group)

This element specifies a shape group in WordprocessingML.

#### whole (Whole E2O Formatting)

Formatting that applies to the entire diagram object, and not just the background, includes line and effect properties.

#### wpc (WordprocessingML Drawing Canvas)

This element specifies a drawing canvas in WordprocessingML. A drawing canvas is a logical grouping of shapes.

#### wsp (WordprocessingML Shape)

This element specifies a shape in WordprocessingML.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| normalEastAsianFl ow (East Asian | Specifies that the text flow of the text contents of the shape shall ignore the text flow value specified by the vert attribute of the bodyPr element. |

#### xfrm (2D Transform for Graphic Frames)

This element specifies a two dimensional transform for a Graphic Frame.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| flipH (Horizontal Flip) | Specifies a horizontal flip. When true, this attribute defines that the shape is flipped horizontally about the center of its bounding box. |
| flipV (Vertical Flip) | Specifies a vertical flip. When true, this attribute defines that the group is flipped vertically about the center of its bounding box. |
| rot (Rotation) | Specifies the rotation of the Graphic Frame. The units for which this attribute is specified in reside within the simple type definition referenced below. |

### Simple Types

This is the complete list of simple types dedicated to DrawingML – WordprocessingML Drawing.

#### ST\_AlignH (Relative Horizontal Alignment Positions)

This simple type contains the possible settings specifying how a DrawingML object can be horizontally aligned relative to the horizontal alignment base defined by the parent element.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| center (Center Alignment) | Specifies that the object shall be centered with respect to the horizontal alignment base. |
| inside (Inside) | Specifies that the object shall be inside of the horizontal alignment base. |
| left (Left Alignment) | Specifies that the object shall be left aligned to the horizontal alignment base. |
| outside (Outside) | Specifies that the object shall be outside of the horizontal alignment base. |
| right (Right Alignment) | Specifies that the object shall be right aligned to the horizontal alignment base. |

#### ST\_AlignV (Vertical Alignment Definition)

This simple type contains the possible settings specifying how a DrawingML object can be vertically aligned relative to the vertical alignment base defined by the parent element.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bottom (Bottom) | Specifies that the object shall be at the bottom of the vertical alignment base. |
| center (Center Alignment) | Specifies that the object shall be centered with respect to the vertical alignment base. |
| inside (Inside) | Specifies that the object shall be inside of the horizontal alignment base. |
| outside (Outside) | Specifies that the object shall be outside of the vertical alignment base. |
| top (Top) | Specifies that the object shall be at the top of the vertical alignment base. |

#### ST\_PositionOffset (Absolute Position Offset Value)

This simple type represents a one dimensional distance which shall be used to offset an objet from its base positioning location stored in EMUs.

#### ST\_RelFromH (Horizontal Relative Positioning)

This simple type specifies the possible values for the base from which the relative horizontal positioning of an object shall be calculated.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| character (Character) | Specifies that the horizontal positioning shall be relative to the position of the anchor within its run content. |
| column (Column) | Specifies that the horizontal positioning shall be relative to the extents of the column which contains its anchor. |
| insideMargin (Inside Margin) | Specifies that the horizontal positioning shall be relative to the inside margin of the current page (the left margin on odd pages, right on even pages). |
| leftMargin (Left Margin) | Specifies that the horizontal positioning shall be relative to the left margin of the page. |
| margin (Page Margin) | Specifies that the horizontal positioning shall be relative to the page margins. |
| outsideMargin (Outside Margin) | Specifies that the horizontal positioning shall be relative to the outside margin of the current page (the right margin on odd pages, left on even pages). |
| page (Page Edge) | Specifies that the horizontal positioning shall be relative to the edge of the page. |
| rightMargin (Right Margin) | Specifies that the horizontal positioning shall be relative to the right margin of the page. |

#### ST\_RelFromV (Vertical Relative Positioning)

This simple type specifies the possible values for the base from which the relative vertical positioning of an object shall be calculated.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bottomMargin (Bottom Margin) | Specifies that the vertical positioning shall be relative to the bottom margin of the current page. |
| insideMargin (Inside Margin) | Specifies that the vertical positioning shall be relative to the inside margin of the current page. |
| line (Line) | Specifies that the vertical positioning shall be relative to the line containing the anchor character. |
| margin (Page Margin) | Specifies that the vertical positioning shall be relative to the page margins. |
| outsideMargin (Outside Margin) | Specifies that the vertical positioning shall be relative to the outside margin of the current page. |
| page (Page Edge) | Specifies that the vertical positioning shall be relative to the edge of the page. |
| paragraph (Paragraph) | Specifies that the vertical positioning shall be relative to the paragraph which contains the drawing anchor. |
| topMargin (Top Margin) | Specifies that the vertical positioning shall be relative to the top margin of the current page. |

#### ST\_WrapDistance (Distance from Text)

This simple type represents a one dimensional distance which shall be used to offset an object from text, stored in EMUs.

#### ST\_WrapText (Text Wrapping Location)

This simple type specifies the possible settings for how text can wrap around the object's left and right sides.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bothSides (Both Sides) | Specifies that text shall wrap around both sides of the object. |
| largest (Largest Side Only) | Specifies that text shall only wrap around the largest side of the object. |
| left (Left Side Only) | Specifies that text shall only wrap around the left side of the object. |
| right (Right Side Only) | Specifies that text shall only wrap around the right side of the object. |

## DrawingML - SpreadsheetML Drawing

Within a SpreadsheetML document, it is possible to include graphical DrawingML objects:

### Elements

The following elements define the contents of the Spreadsheet Drawing namespace:

#### absoluteAnchor (Absolute Anchor Shape Size)

This element is used as an anchor placeholder for a shape or group of shapes. It anchors the object in the same position relative to sheet position and its extents are in EMU units.

#### blipFill (Picture Fill)

This element specifies the type of picture fill that the picture object has. Because a picture has a picture fill already by default, it is possible to have two fills specified for a picture object. An example of this is shown below.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dpi (DPI Setting) | Specifies the DPI (dots per inch) used to calculate the size of the blip. If not present or zero, the DPI in the blip is used. |
| http://purl.oclc.or g/ooxml/drawing ml/main | [*Note*: This attribute is primarily used to keep track of the picture quality within a document. There are different levels of quality needed for print than on-screen viewing and thus a need to track this information. *end note*] |
| rotWithShape | Specifies that the fill should rotate with the shape. That is, when the shape that has been filled with a picture and the containing shape (say a rectangle) is transformed with a rotation then the fill is transformed with the same rotation. |

#### clientData (Client Data)

This element is used to set certain properties related to a drawing element on the client spreadsheet application.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fLocksWithSheet | This attribute indicates whether to disable selection on drawing elements when the sheet is protected. |
| fPrintsWithSheet (Prints With Sheet | This attribute indicates whether to print drawing elements when printing the sheet. |

#### cNvCxnSpPr (Non-Visual Connector Shape Drawing Properties)

This element specifies the non-visual properties for a connector shape. These are the set of properties on a shape which do not affect its display within a spreadsheet.

#### cNvGraphicFramePr (Non-Visual Graphic Frame Drawing Properties)

This element specifies the non-visual properties for a single graphical object frame within a spreadsheet. These are the set of properties of a frame which do not affect its display within a spreadsheet.

#### cNvGrpSpPr (Non-Visual Group Shape Drawing Properties)

This element specifies the non-visual properties of a hierarchical grouping of shapes, graphical object frames, and child groups. These are the set of properties of a group which do not affect its display within a spreadsheet.

#### cNvPicPr (Non-Visual Picture Drawing Properties)

This element describes the non-visual properties of a picture within a spreadsheet. These are the set of properties of a picture which do not affect its display within a spreadsheet.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| preferRelativeResi ze (Relative Resize | Specifies if the user interface should show the resizing of the picture based on the picture's current size or its original size. If this attribute is set to true, then scaling is relative to the original picture size as opposed to the current picture size. |

#### cNvPr (Non-Visual Drawing Properties)

This element specifies the set of non-visual properties for the parent element. These properties specify all the data about the parent which does not affect its display within the spreadsheet.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| descr (Alternative | Specifies alternative text for the current DrawingML object, for use by assistive technologies or applications which do not display the current object. |
| hidden (Hidden) | Specifies whether this DrawingML object is displayed. When a DrawingML object is displayed within a document, that object can be hidden (i.e., present, but not visible). |
| Namespace: | This attribute determines whether the object is rendered or made hidden. [*Note*: An application can have settings which allow this object to be viewed. *end note*] |
| id (Unique | Specifies a unique identifier for the current DrawingML object within the current document. This ID can be used to assist in uniquely identifying this object so that it can be referred to by other parts of the document. |
| name (Name) | Specifies the name of the object. [*Note*: Typically, this is used to store the original file name of a picture object. *end note*] |
| title (Title) | Specifies the title (caption) of the current DrawingML object. |

#### cNvSpPr (Connection Non-Visual Shape Properties)

This element specifies the set of non-visual properties for a connection shape. These properties specify all data about the connection shape which do not affect its display within a spreadsheet.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| txBox (Text Box) | Specifies that the corresponding shape is a text box and thus should be treated as such by the generating application. If this attribute is omitted then it is assumed that the corresponding shape is not specifically a text box. |

#### col (Column))

This element specifies the column that is used within the from and to elements to specify anchoring information for a shape within a spreadsheet

#### colOff (Column Offset)

This element is used to specify the column offset within a cell. The units for which this attribute is specified in reside within the simple type definition referenced below.

#### contentPart (Content Part)

This element specifies a reference to XML content in a format not defined by ECMA-376. [*Note*: This part allows the native use of other commonly used interchange formats, such as:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship to | Specifies the relationship ID to a content part. |

#### cxnSp (Connection Shape)

This element specifies the properties for a connection shape drawing element. A connection shape is a line, etc. that connects two other shapes in this drawing.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fPublished (Publish to Server Flag) | This attribute indicates whether the shape shall be published with the worksheet when sent to the server. |
| macro (Reference to Custom Function) | This element specifies the custom function associated with the object. [*Example*: A macro script, add-in function, and so on. *end example*] |

#### ext (Shape Extent)

This element describes the length and width properties for how far a drawing element should extend for.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| cx (Extent Length) | Specifies the length of the extents rectangle in EMUs. This rectangle shall dictate the size of the object as displayed (the result of any scaling to the original object). |
| cy (Extent Width) | Specifies the width of the extents rectangle in EMUs. This rectangle shall dictate the size of the object as displayed (the result of any scaling to the original object). |

#### from (Starting Anchor Point)

This element specifies the first anchor point for the drawing element. This is used to anchor the top and left sides of the shape within the spreadsheet. That is when the cell that is specified in the from element is adjusted, the shape is also adjusted.

#### graphicFrame (Graphic Frame)

This element describes a single graphical object frame for a spreadsheet which contains a graphical object.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fPublished (Publish to Server Flag) | This attribute indicates whether the shape shall be published with the worksheet when sent to the server. |
| macro (Reference To Custom Function) | This element specifies the custom function associated with the object. [*Example*: A macro script, add-in function, and so on. *end example*] |

#### grpSp (Group Shape)

This element specifies a group shape that represents many shapes grouped together. This shape is to be treated just as if it were a regular shape but instead of being described by a single geometry it is made up of all the shape geometries encompassed within it. Within a group shape each of the shapes that make up the group are specified just as they normally would. The idea behind grouping elements however is that a single transform can apply to many shapes at the same time.

#### grpSpPr (Group Shape Properties)

This element specifies the properties that are to be common across all of the shapes within the corresponding group. If there are any conflicting properties within the group shape properties and the individual shape properties then the individual shape properties should take precedence.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and | Specifies that the group shape should be rendered using only black and white coloring. That is the coloring information for the group shape should be converted to either black or white when rendering the corresponding shapes. |

#### nvCxnSpPr (Non-Visual Properties for a Connection Shape)

This element specifies all non-visual properties for a connection shape. This element is a container for the nonvisual identification properties, shape properties and application properties that are to be associated with a connection shape. This allows for additional information that does not affect the appearance of the connection shape to be stored.

#### nvGraphicFramePr (Non-Visual Properties for a Graphic Frame)

This element specifies all non-visual properties for a graphic frame. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a graphic frame. This allows for additional information that does not affect the appearance of the graphic frame to be stored.

#### nvGrpSpPr (Non-Visual Properties for a Group Shape)

This element specifies all non-visual properties for a group shape. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a group shape. This allows for additional information that does not affect the appearance of the group shape to be stored.

#### nvPicPr (Non-Visual Properties for a Picture)

This element specifies all non-visual properties for a picture. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a picture. This allows for additional information that does not affect the appearance of the picture to be stored.

#### nvSpPr (Non-Visual Properties for a Shape)

This element specifies all non-visual properties for a shape. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a shape. This allows for additional information that does not affect the appearance of the shape to be stored.

#### oneCellAnchor (One Cell Anchor Shape Size)

This element specifies a one cell anchor placeholder for a group, a shape, or a drawing element. It moves with the cell and its extents is in EMU units.

#### pic (Picture)

This element specifies the existence of a picture object within the spreadsheet.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fPublished (Publish to Server Flag) | This attribute indicates whether the shape shall be published with the worksheet when sent to the server. |
| macro (Reference | This element specifies the custom function associated with the object. [*Example*: A macro script, add-in function, and so on. *end example*] |

#### pos (Position)

This element describes the position of a drawing element within a spreadsheet.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| x (X-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |
| y (Y-Axis | Specifies a coordinate on the x-axis. The origin point for this coordinate shall be specified by the parent XML element. |

#### row (Row)

This element specifies the row that is used within the from and to elements to specify anchoring information for a shape within a spreadsheet.

#### rowOff (Row Offset)

This element is used to specify the row offset within a cell. The units for which this attribute is specified in reside within the simple type definition referenced below.

#### sp (Shape)

This element specifies the existence of a single shape. A shape can either be a preset or a custom geometry, defined using the SpreadsheetDrawingML framework. In addition to a geometry each shape can have both visual and non-visual properties attached. Text and corresponding styling information can also be attached to a shape. This shape is specified along with all other shapes within either the shape tree or group shape elements.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fLocksText (Lock Text Flag) | This attribute indicates whether to allow text editing within this drawing object when the parent worksheet is protected. |
| fPublished (Publish to Server Flag) | This attribute indicates whether the shape shall be published with the worksheet when sent to the server. |
| macro (Reference to Custom Function) | This element specifies the custom function associated with the object. [*Example*: A macro script, add-in function, and so on. *end example*] |
| textlink (Text Link) | This attribute specifies a formula linking to spreadsheet cell data. |

#### spPr (Shape Properties)

This element specifies the visual shape properties that can be applied to a special shape such as a connector shape or picture. These are the same properties that are allowed to describe the visual properties of a shape but are used here to describe additional object-specific properties within a document. This allows for these shapes to have both the properties of a shape as well as specific properties that are unique to only them.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and | Specifies that the picture should be rendered using only black and white coloring. That is the coloring information for the picture should be converted to either black or white when rendering the picture. |

#### style (Shape Style)

The element specifies the style that is applied to a shape and the corresponding references for each of the style components such as lines and fills.

#### to (Ending Anchor Point)

This element specifies the second anchor point for the drawing element. This is used to anchor the bottom and right sides of the shape within the spreadsheet. That is when the cell that is specified in the to element is adjusted, the shape is also adjusted.

#### twoCellAnchor (Two Cell Anchor Shape Size)

This element specifies a two cell anchor placeholder for a group, a shape, or a drawing element. It moves with cells and its extents are in EMU units.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| editAs (Positioning and Resizing Behaviors) | Specifies how the DrawingML contents shall be moved and/or resized when the rows and columns between its start and ending anchor (the from and to child elements) are resized, or have additional rows/columns inserted within them, or additional row/columns are added before them. The behaviors are discussed in the simple type referenced below. |

#### txBody (Shape Text Body)

This element specifies the existence of text to be contained within the corresponding shape. All visible text and visible text related properties are contained within this element. There can be multiple paragraphs and within paragraphs multiple runs of text.

#### wsDr (Worksheet Drawing)

This element specifies all drawing objects within the worksheet. It acts much like the spTree element within the DrawingML framework. Allowing for the specification of all shapes for a given part of a document, in this case a single Worksheet.

#### xfrm (2D Transform for Graphic Frames)

This element specifies a two dimensional transform for a Graphic Frame.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| flipH (Horizontal | Specifies a horizontal flip. When true, this attribute defines that the shape is flipped horizontally about the center of its bounding box. |
| flipV (Vertical Flip) | Specifies a vertical flip. When true, this attribute defines that the group is flipped vertically about the center of its bounding box. |
| rot (Rotation) | Specifies the rotation of the Graphic Frame. The units for which this attribute is specified in reside within the simple type definition referenced below. |

### Simple Types

This is the complete list of simple types dedicated to DrawingML – SpreadsheetML Drawing.

#### ST\_ColID (Column ID)

This simple type specifies a column identification. The numerical value used for the column id should be nonnegative and never exceed the number of total columns within the spreadsheet document.

#### ST\_EditAs (Resizing Behaviors)

This simple type specifies all possible settings for how DrawingML contents shall be resized when the rows and columns between its start and ending anchor (the from and to child elements) are resized, or have additional rows/columns inserted within them.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| absolute (Do Not Move or Resize With Underlying Rows/Columns) | Specifies that the current start and end positions shall be maintained with respect to the distances from the absolute start point of the worksheet. |
| oneCell (Move With Cells but Do Not Resize) | Specifies that the current drawing shall move with its row and column (i.e. the object is anchored to the actual from row and column), but that the size shall remain absolute. |
| twoCell (Move and Resize With Anchor Cells) | Specifies that the current drawing shall move and resize to maintain its row and column anchors (i.e. the object is anchored to the actual from and to row and column). |

#### ST\_RowID (Row ID)

This simple type specifies a row identification. The numerical value used for the row id should be non-negative and never exceed the number of total rows within the spreadsheet document.

# DrawingML - Components Reference Material

The subordinate subclauses specify the semantics for the XML markup comprising DrawingML content, which can be used within the contents of WordprocessingML, SpreadsheetML, or PresentationML documents.

## DrawingML - Main

The following parts of the DrawingML Main namespace define additional base constructs for all kinds of DrawingML objects (e.g., paragraphs, text, tables, etc.).

### Paragraphs and Rich Formatting

The Paragraphs and Rich Formatting portion of the DrawingML framework stores text and related formatting information for a text body contained within a shape. Formatting for text within a shape can be broken down into three levels of precision, namely body, paragraph, and run formatting properties.

#### Body Formatting

Being the highest level of formatting available within a shape, the body properties allow for the manipulation of the text area as a whole. This means that all paragraphs and runs of text for the shape in question would be encompassed within here and, therefore, follow the text body style defined here.

##### bodyPr (Body Properties)

This element defines the body properties for the text body within a shape.

|  |  |
| --- | --- |
| Attributes | Description |
| anchor (Anchor) | Specifies the anchoring position of the txBody within the shape. If this attribute is omitted, then a value of t, or top is implied. |
| anchorCtr (Anchor Center) | Specifies the centering of the text box. The way it works fundamentally is to determine the smallest possible "bounds box" for the text and then to center that "bounds box" accordingly. This is different than paragraph alignment, which aligns the text within the "bounds box" for the text. This flag is compatible with all of the different kinds of anchoring. If this attribute is omitted, then a value of 0 or false is implied. |
| bIns (Bottom Inset) | Specifies the bottom inset of the bounding rectangle. Insets are used just as internal margins for text boxes within shapes. If this attribute is omitted, a value of 45720 or 0.05 inches is implied. |
| compatLnSpc | Specifies that the line spacing for this text body is decided in a simplistic manner using the font scene. If this attribute is omitted, a value of 0 or false is implied. |
| forceAA (Force Anti-Alias) | Forces the text to be rendered anti-aliased regardless of the font size. Certain fonts can appear grainy around their edges unless they are anti-aliased. Therefore this attribute allows for the specifying of which bodies of text should always be anti-aliased and which ones should not. If this attribute is omitted, then a value of 0 or false is implied. |
| fromWordArt | Specifies that text within this textbox is converted text from a WordArt object. This is more of a backwards compatibility attribute that is useful to the application from a tracking perspective. WordArt was the former way to apply text effects and therefore this attribute is useful in document conversion scenarios. If this attribute is omitted, then a value of 0 or false is implied. |
| horzOverflow (Text | Determines whether the text can flow out of the bounding box horizontally. This is used to determine what happens in the event that the text within a shape is too large for the bounding box it is contained within. If this attribute is omitted, then a value of overflow is implied. |
| lIns (Left Inset) | Specifies the left inset of the bounding rectangle. Insets are used just as internal margins for text boxes within shapes. If this attribute is omitted, then a value of 91440 or 0.1 inches is implied. |
| numCol (Number of Columns) | Specifies the number of columns of text in the bounding rectangle. When applied to a text run this property takes the width of the bounding box for the text and divides it by the number of columns specified. These columns are then treated as overflow containers in that when the previous column has been filled with text the next column acts as the repository for additional text. When all columns have been filled and text still remains then the overflow properties set for this text body are used and the text is reflowed to make room for additional text. If this attribute is omitted, then a value of 1 is implied. |
| rIns (Right Inset) | Specifies the right inset of the bounding rectangle. Insets are used just as internal margins for text boxes within shapes. If this attribute is omitted, then a value of 91440 or 0.1 inches is implied. |
| rot (Rotation) | Specifies the rotation that is being applied to the text within the bounding box. If it not specified, the rotation of the accompanying shape is used. If it is specified, then this is applied independently from the shape. That is the shape can have a rotation applied in addition to the text itself having a rotation applied to it. If this attribute is omitted, then a value of 0, is implied. |
| rtlCol (Columns Right-To-Left) | Specifies whether columns are used in a right-to-left or left-to-right order. The usage of this attribute only sets the column order that is used to determine which column overflow text should go to next. If this attribute is omitted, then a value of 0 or false is implied in which case text starts in the leftmost column and flow to the right. |
| spcCol (Space Between Columns) | Specifies the space between text columns in the text area. This should only apply when there is more than 1 column present. If this attribute is omitted, then a value of 0 is implied. |
| spcFirstLastPara (Paragraph Spacing) | Specifies whether the before and after paragraph spacing defined by the user is to be respected. While the spacing between paragraphs is helpful, it is additionally useful to be able to set a flag as to whether this spacing is to be followed at the edges of the text body, in other words the first and last paragraphs in the text body. More precisely since this is a text body level property it should only effect the before paragraph spacing of the first paragraph and the after paragraph spacing of the last paragraph for a given text body. If this attribute is omitted, then a value of 0, or false is implied. |
| tIns (Top Inset) | Specifies the top inset of the bounding rectangle. Insets are used just as internal margins for text boxes within shapes. If this attribute is omitted, then a value of 45720 or 0.05 inches is implied. |
| upright (Text Upright) | Specifies whether text should remain upright, regardless of the transform applied to it and the accompanying shape transform. If this attribute is omitted, then a value of 0, or false is implied. |
| vert (Vertical Text) | Determines if the text within the given text body should be displayed vertically. If this attribute is omitted, then a value of horz, or no vertical text is implied. |
| vertOverflow (Text Vertical Overflow) | Determines whether the text can flow out of the bounding box vertically. This is used to determine what happens in the event that the text within a shape is too large for the bounding box it is contained within. If this attribute is omitted, then a value of overflow is implied. |
| wrap (Text Wrapping Type) | Specifies the wrapping options to be used for this text body. If this attribute is omitted, then a value of square is implied which wraps the text using the bounding text box. |

##### noAutofit (No AutoFit)

This element specifies that text within the text body should not be auto-fit to the bounding box. Auto-fitting is when text within a text box is scaled in order to remain inside the text box. If this element is omitted, then noAutofit or auto-fit off is implied.

##### normAutofit (Normal AutoFit)

This element specifies that text within the text body should be normally auto-fit to the bounding box. Autofitting is when text within a text box is scaled in order to remain inside the text box. If this element is omitted, then noAutofit or auto-fit off is implied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fontScale (Font | Specifies the percentage of the original font size to which each run in the text body is scaled. In order to auto-fit text within a bounding box it is sometimes necessary to decrease the font size by a certain percentage. Using this attribute the font within a text box can be scaled based on the value provided. A value of 100% scales the text to 100%, while a value of 1% scales the text to 1%. If this attribute is omitted, then a value of 100% is implied. |
| lnSpcReduction | Specifies the percentage amount by which the line spacing of each paragraph in the text body is reduced. The reduction is applied by subtracting it from the original line spacing value. Using this attribute the vertical spacing between the lines of text can be scaled by a percent amount. A value of 100% reduces the line spacing by 100%, while a value of 1% reduces the line spacing by one percent. If this attribute is omitted, then a value of 0% is implied. |

##### spAutoFit (Shape AutoFit)

This element specifies that a shape should be auto-fit to fully contain the text described within it. Auto-fitting is when text within a shape is scaled in order to contain all the text inside. If this element is omitted, then noAutofit or auto-fit off is implied.

#### Paragraph Formatting

This level of formatting allows for more granular control of text within a shape. Properties here apply to all text residing within the corresponding paragraph. This intermediate property level allows freedom to assign what would seem like lower level properties to a larger group of text. Along with this the paragraph property level also allows what would seem like larger group properties to a more granular set of text. This makes for a property level that is quite versatile in its ability to define formatting on text within a shape.

##### br (Text Line Break)

This element specifies the existence of a vertical line break between two runs of text within a paragraph. In addition to specifying a vertical space between two runs of text, this element can also have run properties specified via the rPr child element. This sets the formatting of text for the line break so that if text is later inserted there that a new run can be generated with the correct formatting.

##### defPPr (Default Paragraph Style)

This element specifies the paragraph properties that are to be applied when no other paragraph properties have been specified. If this attribute is omitted, then it is left to the application to decide the set of default paragraph properties that should be applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Alignment) | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. |
| indent (Indent) | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this attribute is omitted, then a value of -342900 is implied. |
| latinLnBrk (Latin Line Break) | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. |
| marL (Left Margin) | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. |
| marR (Right Margin) | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. |
| rtl (Right To Left) | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. |

##### endParaRPr (End Paragraph Run Properties)

This element specifies the text run properties that are to be used if another run is inserted after the last run specified. This effectively saves the run property state so that it can be applied when the user enters additional text. If this element is omitted, then the application can determine which default properties to apply. It is recommended that this element be specified at the end of the list of text runs within the paragraph so that an orderly list is maintained.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | | **Description** | |
| altLang (Alternative Language) | | Specifies the alternate language to use when the generating application is displaying the user interface controls. If this attribute is omitted, than the lang attribute is used here. | |
| b (Bold) | | Specifies whether a run of text is formatted as bold text. If this attribute is omitted, than a value of 0, or false is assumed. | |
| baseline (Baseline) | | Specifies the baseline for both the superscript and subscript fonts. The size is specified using a percentage where 1% is equal to 1 percent of the font size and 100% is equal to 100 percent font of the font size. | |
| bmk (Bookmark | | Specifies the link target name that is used to reference to the proper link properties in a custom XML part within the document. | |
| cap (Capitalization) | | Specifies the capitalization that is to be applied to the text run. This is a render-only modification and does not affect the actual characters stored in the text run. This attribute is also distinct from the toggle function where the actual characters stored in the text run are changed. | |
| dirty (Dirty) | | Specifies that the content of a text run has changed since the proofing tools have last been run. Effectively this flags text that is to be checked again by the generating application for mistakes such as spelling, grammar, etc. | |
| err (Spelling Error) | Specifies that when this run of text was checked for spelling, grammar, etc. that a mistake was indeed found. This allows the generating application to effectively save the state of the mistakes within the document instead of having to perform a full pass check upon opening the document. | |
| i (Italics) | Specifies whether a run of text is formatted as italic text. If this attribute is omitted, than a value of 0, or false is assumed. | |
| kern (Kerning) | Specifies the minimum font size at which character kerning occurs for this text run. | |
| kumimoji | Specifies whether the numbers contained within vertical text continue vertically with the text or whether they are to be displayed horizontally while the surrounding characters continue in a vertical fashion. If this attribute is omitted, than a value of 0, or false is assumed. | |
| lang (Language ID) | Specifies the language to be used when the generating application is displaying the user interface controls. If this attribute is omitted, than the generating application can select a language of its choice. | |
| noProof (No Proofing) | Specifies that a run of text has been selected by the user to not be checked for mistakes. Therefore if there are spelling, grammar, etc mistakes within this text the generating application should ignore them. | | |
| normalizeH | Specifies the normalization of height that is to be applied to the text run. This is a renderonly modification and does not affect the actual characters stored in the text run. This attribute is also distinct from the toggle function where the actual characters stored in the text run are changed. If this attribute is omitted, than a value of 0, or false is assumed. | | |
| smtClean (SmartTag Clean) | Specifies whether or not a text run has been checked for smart tags. This attribute acts much like the dirty attribute dose for the checking of spelling, grammar, etc. A value of true here indicates to the generating application that this text run should be checked for smart tags. If this attribute is omitted, than a value of 0, or false is assumed. | | |
| smtId (SmartTag ID) | Specifies a smart tag identifier for a run of text. This ID is unique throughout the presentation and is used to reference corresponding auxiliary information about the smart tag. [*Note*: For a complete definition of smart tags, which are semantically identical throughout Office Open XML, see §17.5.1. *end note*] | | |
| spc (Spacing) | Specifies the spacing between characters within a text run. This spacing is specified numerically and should be consistently applied across the entire run of text by the generating application. Whole points are specified in increments of 100 starting with 100 being a point size of 1. For instance a font point size of 12 would be 1200 and a font point size of 12.5 would be 1250. If this attribute is omitted than a value of 0 or no adjustment is assumed. | | |
| strike | Specifies whether a run of text is formatted as strikethrough text. If this attribute is omitted, than no strikethrough is assumed. | | |
| sz (Font Size) | Specifies the size of text within a text run. Whole points are specified in increments of | | |
| u (Underline) | Specifies whether a run of text is formatted as underlined text. If this attribute is omitted, than no underline is assumed. | | |

##### fld (Text Field)

This element specifies a text field which contains generated text that the application should update periodically. Each piece of text when it is generated is given a unique identification number that is used to refer to a specific field. At the time of creation the text field indicates the kind of text that should be used to update this field. This update type is used so that all applications that did not create this text field can still know what kind of text it should be updated with. Thus the new application can then attach an update type to the text field id for continual updating.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Field ID) | Specifies the unique to this document, host specified token that is used to identify the field. This token is generated when the text field is created and persists in the file as the same token until the text field is removed. Any application should check the document for conflicting tokens before assigning a new token to a text field. |
| type (Field Type) | Specifies the type of text that should be used to update this text field. This is used to inform the rendering application what text it should use to update this text field. There are no specific syntax restrictions placed on this attribute. The generating application can use it to represent any text that should be updated before rendering the presentation. |

##### lnSpc (Line Spacing)

This element specifies the vertical line spacing that is to be used within a paragraph. This can be specified in two different ways, percentage spacing and font point spacing. If this element is omitted then the spacing between two lines of text should be determined by the point size of the largest piece of text within a line.

##### p (Text Paragraphs)

This element specifies the presence of a paragraph of text within the containing text body. The paragraph is the highest level text separation mechanism within a text body. A paragraph can contain text paragraph properties associated with the paragraph. If no properties are listed then properties specified in the defPPr element are used.

##### pPr (Text Paragraph Properties)

This element contains all paragraph level text properties for the containing paragraph. These paragraph properties should override any and all conflicting properties that are associated with the paragraph in question.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | **Description** | | |
| algn (Alignment) | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. | | |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. |
| fontAlgn (Font Alignment) | Determines where vertically on a line of text the actual words are positioned. This deals with vertical placement of the characters with respect to the baselines. For instance having text anchored to the top baseline, anchored to the bottom baseline, centered in between, etc. To understand this attribute and it's use it is helpful to understand what baselines are. A diagram describing these different cases is shown below. If this attribute is omitted, then a value of base is implied. | | |
| hangingPunct (Hanging | Specifies whether punctuation is to be forcefully laid out on a line of text or put on a different line of text. That is, if there is punctuation at the end of a run of text that should be carried over to a separate line does it actually get carried over. A true value allows for hanging punctuation forcing the punctuation to not be carried over and a value of false allows the punctuation to be carried onto the next text line. If this attribute is omitted, then a value of 0, or false is implied. | |
| indent (Indent) | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this | |
| latinLnBrk (Latin Line Break) | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. |
| marL (Left Margin) | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. | |
| marR (Right Margin) | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. | |
| rtl (Right To Left) | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. | |

##### rtl (Right to Left Run)

This element specifies whether the contents of this run shall have right-to-left characteristics. Specifically, the following behaviors are applied when this element’s val attribute is true (or an equivalent):

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (On/Off Value) | Specifies a boolean value for the property defined by the parent XML element. |

##### spcAft (Space After)

This element specifies the amount of vertical white space that is present after a paragraph. This space is specified in either percentage or points via the child elements spcPct and spcPts.

##### spcBef (Space Before)

This element specifies the amount of vertical white space that is present before a paragraph. This space is specified in either percentage or points via the child elements spcPct and spcPts.

##### spcPct (Spacing Percent)

This element specifies the amount of white space that is to be used between lines and paragraphs in the form of a percentage of the text size. The text size that is used to calculate the spacing here is the text for each run, with the largest text size having precedence. That is if there is a run of text with 10 point font and within the same paragraph on the same line there is a run of text with a 12 point font size then the 12 point should be used to calculate the spacing to be used.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the percentage of the size that the white space should be. |

##### spcPts (Spacing Points)

This element specifies the amount of white space that is to be used between lines and paragraphs in the form of a text point size. The size is specified using points where 100 is equal to 1 point font and 1200 is equal to 12 point.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the size of the white space in point size. Whole points are specified in increments of 100 starting with 100 being a point size of 1. For instance a font point size of 12 would be 1200 and a font point size of 12.5 would be 1250. |

##### tab (Tab Stop)

This element specifies a single tab stop to be used on a line of text when there are one or more tab characters present within the text. When there is more than one present than they should be utilized in increasing position order which is specified via the pos attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Tab Alignment) | Specifies the alignment that is to be applied to text using this tab stop. If this attribute is omitted then the application default for the generating application. |
| pos (Tab Position) | Specifies the position of the tab stop relative to the left margin. If this attribute is omitted then the application default for tab stops is used. |

##### tabLst (Tab List)

This element specifies the list of all tab stops that are to be used within a paragraph. These tabs should be used when describing any custom tab stops within the document. If these are not specified then the default tab stops of the generating application should be used.

#### Run Formatting

Run level formatting is the most granular property level and allows for the specifying of all low level text properties. The text run is what all paragraphs are derived from and thus specifying various properties per run allows for a diversely formatted text paragraph.

##### cs (Complex Script Font)

This element specifies that a complex script font be used for a specific run of text. This font is specified with a typeface attribute much like the others but is specifically classified as a complex script font.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| charset (Similar Character Set) | Specifies the character set which is supported by the parent font. This information can be used in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available. |
| panose (Panose Setting) | Specifies the Panose-1 classification number for the current font using the mechanism defined in §5.2.7.17 of ISO/IEC 14496-22. |
| pitchFamily | Specifies the font pitch as well as the font family for the corresponding font. |
| typeface (Text Typeface) | Specifies the typeface, or name of the font that is to be used. The typeface is a string name of the specific font that should be used in rendering the presentation. If this font is not available within the font list of the generating application than font substitution logic |

##### defRPr (Default Text Run Properties)

This element contains all default run level text properties for the text runs within a containing paragraph. These properties are to be used when overriding properties have not been defined within the rPr element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| altLang (Alternative Language) | Specifies the alternate language to use when the generating application is displaying the user interface controls. If this attribute is omitted, than the lang attribute is used here. |
| b (Bold) | Specifies whether a run of text is formatted as bold text. If this attribute is omitted, than a value of 0, or false is assumed. |
| bmk (Bookmark | Specifies the link target name that is used to reference to the proper link properties in a custom XML part within the document. | |
| cap (Capitalization) | Specifies the capitalization that is to be applied to the text run. This is a render-only modification and does not affect the actual characters stored in the text run. This attribute is also distinct from the toggle function where the actual characters stored in the text run are changed. | |
| dirty (Dirty) | Specifies that the content of a text run has changed since the proofing tools have last been run. Effectively this flags text that is to be checked again by the generating application for mistakes such as spelling, grammar, etc. | |
| err (Spelling Error) | Specifies that when this run of text was checked for spelling, grammar, etc. that a mistake was indeed found. This allows the generating application to effectively save the state of the mistakes within the document instead of having to perform a full pass check upon opening the document. | |
| i (Italics) | Specifies whether a run of text is formatted as italic text. If this attribute is omitted, than a value of 0, or false is assumed. | |
| kern (Kerning) | Specifies the minimum font size at which character kerning occurs for this text run. | |
| kumimoji | Specifies whether the numbers contained within vertical text continue vertically with the text or whether they are to be displayed horizontally while the surrounding characters continue in a vertical fashion. If this attribute is omitted, than a value of 0, or false is assumed. | |
| lang (Language ID) | Specifies the language to be used when the generating application is displaying the user interface controls. If this attribute is omitted, than the generating application can select a language of its choice. | |
| noProof (No Proofing) | Specifies that a run of text has been selected by the user to not be checked for mistakes. Therefore if there are spelling, grammar, etc mistakes within this text the generating application should ignore them. | |
| normalizeH | Specifies the normalization of height that is to be applied to the text run. This is a renderonly modification and does not affect the actual characters stored in the text run. This attribute is also distinct from the toggle function where the actual characters stored in the text run are changed. If this attribute is omitted, than a value of 0, or false is assumed. | |
| smtClean (SmartTag Clean) | Specifies whether or not a text run has been checked for smart tags. This attribute acts much like the dirty attribute dose for the checking of spelling, grammar, etc. A value of true here indicates to the generating application that this text run should be checked for smart tags. If this attribute is omitted, than a value of 0, or false is assumed. | |
| smtId (SmartTag ID) | Specifies a smart tag identifier for a run of text. This ID is unique throughout the presentation and is used to reference corresponding auxiliary information about the smart tag. [*Note*: For a complete definition of smart tags, which are semantically identical throughout Office Open XML, see §17.5.1. *end note*] | |
| spc (Spacing) | Specifies the spacing between characters within a text run. This spacing is specified numerically and should be consistently applied across the entire run of text by the generating application. Whole points are specified in increments of 100 starting with 100 being a point size of 1. For instance a font point size of 12 would be 1200 and a font point size of 12.5 would be 1250. If this attribute is omitted than a value of 0 or no adjustment is assumed. | |
| strike | Specifies whether a run of text is formatted as strikethrough text. If this attribute is omitted, than no strikethrough is assumed. | |
| sz (Font Size) | Specifies the size of text within a text run. Whole points are specified in increments of | |
| u (Underline) | Specifies whether a run of text is formatted as underlined text. If this attribute is omitted, than no underline is assumed. | |

##### ea (East Asian Font)

This element specifies that an East Asian font be used for a specific run of text. This font is specified with a typeface attribute much like the others but is specifically classified as an East Asian font.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| charset (Similar Character Set) | | Specifies the character set which is supported by the parent font. This information can be used in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available. |
| panose (Panose Setting) | Specifies the Panose-1 classification number for the current font using the mechanism defined in §5.2.7.17 of ISO/IEC 14496-22. | |
| pitchFamily | Specifies the font pitch as well as the font family for the corresponding font. | |
| typeface (Text Typeface) | Specifies the typeface, or name of the font that is to be used. The typeface is a string name of the specific font that should be used in rendering the presentation. If this font is not available within the font list of the generating application than font substitution logic should be utilized in order to select an alternate font. | |

##### highlight (Highlight Color)

This element specifies the highlight color that is present for a run of text.

##### hlinkClick (Click Hyperlink)

Specifies the on-click hyperlink information to be applied to a run of text. When the hyperlink text is clicked the link is fetched.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| action (Action Setting) | Specifies an action that is to be taken when this hyperlink is activated. This can be used to specify a slide to be navigated to or a script of code to be run. |
| endSnd (End Sounds) | Specifies if the URL in question should stop all sounds that are playing when it is clicked. |
| highlightClick | Specifies if this attribute has already been used within this document. That is when a hyperlink has already been visited that this attribute would be utilized so the generating application can determine the color of this text. If this attribute is omitted, then a value of 0 or false is implied. |
| history (Add Hyperlink to Page | Specifies whether to add this URI to the history when navigating to it. This allows for the viewing of this presentation without the storing of history information on the viewing machine. If this attribute is omitted, then a value of 1 or true is assumed. |
| id (Drawing Object | Specifies the relationship id that when looked up in this slides relationship file contains the target of this hyperlink. This attribute cannot be omitted. |
| invalidUrl (Invalid URL) | Specifies the URL when it has been determined by the generating application that the URL is invalid. That is the generating application can still store the URL but it is known that this URL is not correct. |
| tgtFrame (Target Frame) | Specifies the target frame that is to be used when opening this hyperlink. When the hyperlink is activated this attribute is used to determine if a new window is launched for viewing or if an existing one can be used. If this attribute is omitted, than a new window is opened. |
| tooltip (Hyperlink Tooltip) | Specifies the tooltip that should be displayed when the hyperlink text is hovered over with the mouse. If this attribute is omitted, than the hyperlink text itself can be displayed. |

##### hlinkMouseOver (Mouse-Over Hyperlink)

Specifies the mouse-over hyperlink information to be applied to a run of text. When the mouse is hovered over this hyperlink text the link is fetched.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| action (Action Setting) | Specifies an action that is to be taken when this hyperlink is activated. This can be used to specify a slide to be navigated to or a script of code to be run. |
| endSnd (End Sounds) | Specifies if the URL in question should stop all sounds that are playing when it is clicked. |
| highlightClick | Specifies if this attribute has already been used within this document. That is when a hyperlink has already been visited that this attribute would be utilized so the generating application can determine the color of this text. If this attribute is omitted, then a value of 0 or false is implied. |
| history (Add Hyperlink to Page | Specifies whether to add this URI to the history when navigating to it. This allows for the viewing of this presentation without the storing of history information on the viewing machine. If this attribute is omitted, then a value of 1 or true is assumed. |
| id (Drawing Object | Specifies the relationship id that when looked up in this slides relationship file contains the target of this hyperlink. This attribute cannot be omitted. |
| invalidUrl (Invalid URL) | Specifies the URL when it has been determined by the generating application that the URL is invalid. That is the generating application can still store the URL but it is known that this URL is not correct. |
| tgtFrame (Target Frame) | Specifies the target frame that is to be used when opening this hyperlink. When the hyperlink is activated this attribute is used to determine if a new window is launched for viewing or if an existing one can be used. If this attribute is omitted, than a new window is opened. |
| tooltip (Hyperlink Tooltip) | Specifies the tooltip that should be displayed when the hyperlink text is hovered over with the mouse. If this attribute is omitted, than the hyperlink text itself can be displayed. |

##### latin (Latin Font)

This element specifies that a Latin font be used for a specific run of text. This font is specified with a typeface attribute much like the others but is specifically classified as a Latin font.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| charset (Similar Character Set) | Specifies the character set which is supported by the parent font. This information can be used in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available. |
| panose (Panose Setting) | Specifies the Panose-1 classification number for the current font using the mechanism defined in §5.2.7.17 of ISO/IEC 14496-22. |
| pitchFamily | Specifies the font pitch as well as the font family for the corresponding font. |
| typeface (Text Typeface) | Specifies the typeface, or name of the font that is to be used. The typeface is a string name of the specific font that should be used in rendering the presentation. If this font is not available within the font list of the generating application than font substitution logic |

##### r (Text Run)

This element specifies the presence of a run of text within the containing text body. The run element is the lowest level text separation mechanism within a text body. A text run can contain text run properties associated with the run. If no properties are listed then properties specified in the defRPr element are used.

##### rPr (Text Run Properties)

This element contains all run level text properties for the text runs within a containing paragraph.

|  |  |  |
| --- | --- | --- |
| **Attributes** | | **Description** |
| altLang (Alternative Language) | | Specifies the alternate language to use when the generating application is displaying the user interface controls. If this attribute is omitted, than the lang attribute is used here. |
| b (Bold) | | Specifies whether a run of text is formatted as bold text. If this attribute is omitted, than a value of 0, or false is assumed. |
| baseline (Baseline) | | Specifies the baseline for both the superscript and subscript fonts. The size is specified using a percentage where 1% is equal to 1 percent of the font size and 100% is equal to 100 percent font of the font size. |
| bmk (Bookmark | | Specifies the link target name that is used to reference to the proper link properties in a custom XML part within the document. |
| cap (Capitalization) | | Specifies the capitalization that is to be applied to the text run. This is a render-only modification and does not affect the actual characters stored in the text run. This attribute is also distinct from the toggle function where the actual characters stored in the text run are changed. |
| dirty (Dirty) | | Specifies that the content of a text run has changed since the proofing tools have last been run. Effectively this flags text that is to be checked again by the generating application for mistakes such as spelling, grammar, etc. | |
| err (Spelling Error) | | Specifies that when this run of text was checked for spelling, grammar, etc. that a mistake was indeed found. This allows the generating application to effectively save the state of the mistakes within the document instead of having to perform a full pass check upon opening the document. | |
| i (Italics) | | Specifies whether a run of text is formatted as italic text. If this attribute is omitted, than a value of 0, or false is assumed. | |
| kern (Kerning) | | Specifies the minimum font size at which character kerning occurs for this text run. | |
| kumimoji | | Specifies whether the numbers contained within vertical text continue vertically with the text or whether they are to be displayed horizontally while the surrounding characters continue in a vertical fashion. If this attribute is omitted, than a value of 0, or false is assumed. | |
| lang (Language ID) | | Specifies the language to be used when the generating application is displaying the user interface controls. If this attribute is omitted, than the generating application can select a language of its choice. |
| noProof (No Proofing) | | Specifies that a run of text has been selected by the user to not be checked for mistakes. Therefore if there are spelling, grammar, etc mistakes within this text the generating application should ignore them. |
| normalizeH | | Specifies the normalization of height that is to be applied to the text run. This is a renderonly modification and does not affect the actual characters stored in the text run. This attribute is also distinct from the toggle function where the actual characters stored in the text run are changed. If this attribute is omitted, than a value of 0, or false is assumed. |
| smtClean (SmartTag Clean) | | Specifies whether or not a text run has been checked for smart tags. This attribute acts much like the dirty attribute dose for the checking of spelling, grammar, etc. A value of true here indicates to the generating application that this text run should be checked for smart tags. If this attribute is omitted, than a value of 0, or false is assumed. |
| smtId (SmartTag ID) | | Specifies a smart tag identifier for a run of text. This ID is unique throughout the presentation and is used to reference corresponding auxiliary information about the smart tag. [*Note*: For a complete definition of smart tags, which are semantically identical throughout Office Open XML, see §17.5.1. *end note*] |
| spc (Spacing) | Specifies the spacing between characters within a text run. This spacing is specified numerically and should be consistently applied across the entire run of text by the generating application. Whole points are specified in increments of 100 starting with 100 being a point size of 1. For instance a font point size of 12 would be 1200 and a font point size of 12.5 would be 1250. If this attribute is omitted than a value of 0 or no adjustment is assumed. | |
| strike | Specifies whether a run of text is formatted as strikethrough text. If this attribute is omitted, than no strikethrough is assumed. | |
| sz (Font Size) | Specifies the size of text within a text run. Whole points are specified in increments of | |
| u (Underline) | Specifies whether a run of text is formatted as underlined text. If this attribute is omitted, than no underline is assumed. | |

##### sym (Symbol Font)

This element specifies that a symbol font be used for a specific run of text. This font is specified with a typeface attribute much like the others but is specifically classified as a symbol font.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| charset (Similar Character Set) | | Specifies the character set which is supported by the parent font. This information can be used in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available. |
| panose (Panose | Specifies the Panose-1 classification number for the current font using the mechanism defined in §5.2.7.17 of ISO/IEC 14496-22. | |
| pitchFamily | Specifies the font pitch as well as the font family for the corresponding font. | |
| typeface (Text Typeface) | Specifies the typeface, or name of the font that is to be used. The typeface is a string name of the specific font that should be used in rendering the presentation. If this font is not available within the font list of the generating application than font substitution logic should be utilized in order to select an alternate font. | |

##### t (Text String)

This element specifies the actual text for this text run. This is the text that is formatted using all specified body, paragraph and run properties. This element shall be present within a run of text.

##### uFill (Underline Fill)

This element specifies the fill color of an underline for a run of text.

##### uFillTx (Underline Fill Properties Follow Text)

This element specifies that the fill color of an underline for a run of text should be of the same color as the text run within which it is contained.

##### uLn (Underline Stroke)

This element specifies the properties for the stroke of the underline that is present within a run of text.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Stroke Alignment) | Specifies the alignment to be used for the underline stroke. |
| cap (Line Ending Cap Type) | Specifies the ending caps that should be used for this line. [*Note*: Examples of cap types are rounded, flat, etc. *end note*] If this attribute is omitted, than a value of square is assumed. |
| cmpd (Compound | Specifies the compound line type to be used for the underline stroke. If this attribute is omitted, then a value of sng is assumed. |
| w (Line Width) | Specifies the width to be used for the underline stroke. If this attribute is omitted, then a value of 0 is assumed. |

##### uLnTx (Underline Follows Text)

This element specifies that the stroke style of an underline for a run of text should be of the same as the text run within which it is contained.

#### Bullets and Numbering

In addition to the above body, paragraph and text run properties there can also be a structure of bullets and numbering that can be defined by utilizing a few of these layers. Since Bullet and Numbering does span multiple formatting levels it is described on it's own in the following section.

##### buAutoNum (Auto-Numbered Bullet)

This element specifies that automatic numbered bullet points should be applied to a paragraph. These are not just numbers used as bullet points but instead automatically assigned numbers that are based on both buAutoNum attributes and paragraph level.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| startAt (Start | Specifies the number that starts a given sequence of automatically numbered bullets. |
| type (Bullet | Specifies the numbering scheme that is to be used. This allows for the describing of formats other than strictly numbers. For instance, a set of bullets can be represented by a series of Roman numerals instead of the standard 1,2,3,etc. number set. |

##### buBlip (Picture Bullet)

This element specifies that a picture be applied to a set of bullets. This element allows for any standard picture format graphic to be used instead of the typical bullet characters. This opens up the possibility for bullets to be anything the generating application would seek to apply.

##### buChar (Character Bullet)

This element specifies that a character be applied to a set of bullets. These bullets are allowed to be any character in any font that the system is able to support. If no bullet font is specified along with this element then the paragraph font is used.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| char (Bullet Character) | Specifies the character to be used in place of the standard bullet point. This character can be any character for the specified font that is supported by the system upon which this document is being viewed. |

##### buClr (Color Specified)

This element specifies the color to be used on bullet characters within a given paragraph. The color is specified using the numerical RGB color format.

##### buClrTx (Follow Text)

This element specifies that the color of the bullets for a paragraph should be of the same color as the text run within which each bullet is contained.

##### buFont (Specified)

This element specifies the font to be used on bullet characters within a given paragraph. The font is specified using the typeface that it is registered as within the generating application.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| charset (Similar Character Set) | | Specifies the character set which is supported by the parent font. This information can be used in font substitution logic to locate an appropriate substitute font when this font is not available. This information is determined by querying the font when present and shall not be modified when the font is not available. |
| panose (Panose Setting) | Specifies the Panose-1 classification number for the current font using the mechanism defined in §5.2.7.17 of ISO/IEC 14496-22. | |
| pitchFamily | Specifies the font pitch as well as the font family for the corresponding font. | |
| typeface (Text Typeface) | Specifies the typeface, or name of the font that is to be used. The typeface is a string name of the specific font that should be used in rendering the presentation. If this font is not available within the font list of the generating application than font substitution logic should be utilized in order to select an alternate font. | |

##### buFontTx (Follow text)

This element specifies that the font of the bullets for a paragraph should be of the same font as the text run within which each bullet is contained.

##### buNone (No Bullet)

This element specifies that the paragraph within which it is applied is to have no bullet formatting applied to it. That is to say that there should be no bulleting found within the paragraph where this element is specified.

##### buSzPct (Bullet Size Percentage)

This element specifies the size in percentage of the surrounding text to be used on bullet characters within a given paragraph.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the percentage of the text size that this bullet should be. This attribute should |

##### buSzPts (Bullet Size Points)

This element specifies the size in points to be used on bullet characters within a given paragraph. The size is specified using the points where 100 is equal to 1 point font and 1200 is equal to 12 point font.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the size of the bullets in point size. Whole points are specified in increments of 100 starting with 100 being a point size of 1. For instance a font point size of 12 would be 1200 and a font point size of 12.5 would be 1250. |

##### buSzTx (Bullet Size Follows Text)

This element specifies that the size of the bullets for a paragraph should be of the same point size as the text run within which each bullet is contained.

##### lstStyle (Text List Styles)

This element specifies the list of styles associated with this body of text.

##### lvl1pPr (List Level 1 Text Style)

This element specifies all paragraph level text properties for all elements that have the attribute lvl="0". There are a total of 9 level text property elements allowed, levels 0-8. It is recommended that the order in which this and other level property elements are specified be in order of increasing level. That is lvl2pPr should come before lvl3pPr. This allows the lower level properties to take precedence over the higher level ones because they are parsed first.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | **Description** | | |
| algn (Alignment) | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. | | |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. |
| fontAlgn (Font Alignment) | Determines where vertically on a line of text the actual words are positioned. This deals with vertical placement of the characters with respect to the baselines. For instance having text anchored to the top baseline, anchored to the bottom baseline, centered in between, etc. To understand this attribute and it's use it is helpful to understand what baselines are. A diagram describing these different cases is shown below. If this attribute is omitted, then a value of base is implied. | | |
| hangingPunct (Hanging | Specifies whether punctuation is to be forcefully laid out on a line of text or put on a different line of text. That is, if there is punctuation at the end of a run of text that should be carried over to a separate line does it actually get carried over. A true value allows for hanging punctuation forcing the punctuation to not be carried over and a value of false allows the punctuation to be carried onto the next text line. If this attribute is omitted, then a value of 0, or false is implied. | |
| indent (Indent) | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this | |
| latinLnBrk (Latin Line Break) | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. |
| marL (Left Margin) | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. | |
| marR (Right Margin) | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. | |
| rtl (Right To Left) | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. | |

##### lvl2pPr (List Level 2 Text Style)

This element specifies all paragraph level text properties for all elements that have the attribute lvl="1". There are a total of 9 level text property elements allowed, levels 0-8. It is recommended that the order in which this and other level property elements are specified be in order of increasing level. That is lvl2pPr should come before lvl3pPr. This allows the lower level properties to take precedence over the higher level ones because they are parsed first.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | **Description** | | |
| algn (Alignment) | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. | | |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. |
| fontAlgn (Font Alignment) | Determines where vertically on a line of text the actual words are positioned. This deals with vertical placement of the characters with respect to the baselines. For instance having text anchored to the top baseline, anchored to the bottom baseline, centered in between, etc. To understand this attribute and it's use it is helpful to understand what baselines are. A diagram describing these different cases is shown below. If this attribute is omitted, then a value of base is implied. | | |
| hangingPunct (Hanging | Specifies whether punctuation is to be forcefully laid out on a line of text or put on a different line of text. That is, if there is punctuation at the end of a run of text that should be carried over to a separate line does it actually get carried over. A true value allows for hanging punctuation forcing the punctuation to not be carried over and a value of false allows the punctuation to be carried onto the next text line. If this attribute is omitted, then a value of 0, or false is implied. | |
| indent (Indent) | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this attribute is omitted, then a value of -342900 is implied. | |
| latinLnBrk (Latin Line Break) | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. |
| marL (Left Margin) | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. | |
| marR (Right Margin) | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. | |
| rtl (Right To Left) | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. | |

##### lvl3pPr (List Level 3 Text Style)

This element specifies all paragraph level text properties for all elements that have the attribute lvl="2". There are a total of 9 level text property elements allowed, levels 0-8. It is recommended that the order in which this and other level property elements are specified be in order of increasing level. That is lvl2pPr should come before lvl3pPr. This allows the lower level properties to take precedence over the higher level ones because they are parsed first.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | | | **Description** | | |
| algn (Alignment) | | | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. | | |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. | | |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| fontAlgn (Font Alignment) | | | Determines where vertically on a line of text the actual words are positioned. This deals with vertical placement of the characters with respect to the baselines. For instance having text anchored to the top baseline, anchored to the bottom baseline, centered in between, etc. To understand this attribute and it's use it is helpful to understand what baselines are. A diagram describing these different cases is shown below. If this attribute is omitted, then a value of base is implied. | | |
| hangingPunct (Hanging | | Specifies whether punctuation is to be forcefully laid out on a line of text or put on a different line of text. That is, if there is punctuation at the end of a run of text that should be carried over to a separate line does it actually get carried over. A true value allows for hanging punctuation forcing the punctuation to not be carried over and a value of false allows the punctuation to be carried onto the next text line. If this attribute is omitted, then a value of 0, or false is implied. | | |
| indent (Indent) | | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this attribute is omitted, then a value of -342900 is implied. | | |
| latinLnBrk (Latin Line Break) | | | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. | | |
| marL (Left Margin) | | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. | | |
| marR (Right Margin) | | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. | | |
| rtl (Right To Left) | | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. | | |

##### lvl4pPr (List Level 4 Text Style)

This element specifies all paragraph level text properties for all elements that have the attribute lvl="3". There are a total of 9 level text property elements allowed, levels 0-8. It is recommended that the order in which this and other level property elements are specified be in order of increasing level. That is lvl2pPr should come before lvl3pPr. This allows the lower level properties to take precedence over the higher level ones because they are parsed first.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | **Description** | | |
| algn (Alignment) | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. | | |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. |
| fontAlgn (Font Alignment) | Determines where vertically on a line of text the actual words are positioned. This deals with vertical placement of the characters with respect to the baselines. For instance having text anchored to the top baseline, anchored to the bottom baseline, centered in between, etc. To understand this attribute and it's use it is helpful to understand what baselines are. A diagram describing these different cases is shown below. If this attribute is omitted, then a value of base is implied. | | |
| hangingPunct (Hanging | Specifies whether punctuation is to be forcefully laid out on a line of text or put on a different line of text. That is, if there is punctuation at the end of a run of text that should be carried over to a separate line does it actually get carried over. A true value allows for hanging punctuation forcing the punctuation to not be carried over and a value of false allows the punctuation to be carried onto the next text line. If this attribute is omitted, then a value of 0, or false is implied. | |
| indent (Indent) | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this attribute is omitted, then a value of -342900 is implied. | |
| latinLnBrk (Latin Line Break) | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. |
| marL (Left Margin) | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. | |
| marR (Right Margin) | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. | |
| rtl (Right To Left) | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. | |

##### lvl5pPr (List Level 5 Text Style)

This element specifies all paragraph level text properties for all elements that have the attribute lvl="4". There are a total of 9 level text property elements allowed, levels 0-8. It is recommended that the order in which this and other level property elements are specified be in order of increasing level. That is lvl2pPr should come before lvl3pPr. This allows the lower level properties to take precedence over the higher level ones because they are parsed first.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | | | **Description** | | |
| algn (Alignment) | | | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. | | |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. | | |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| fontAlgn (Font Alignment) | | | Determines where vertically on a line of text the actual words are positioned. This deals with vertical placement of the characters with respect to the baselines. For instance having text anchored to the top baseline, anchored to the bottom baseline, centered in between, etc. To understand this attribute and it's use it is helpful to understand what baselines are. A diagram describing these different cases is shown below. If this attribute is omitted, then a value of base is implied. | | |
| hangingPunct (Hanging | | Specifies whether punctuation is to be forcefully laid out on a line of text or put on a different line of text. That is, if there is punctuation at the end of a run of text that should be carried over to a separate line does it actually get carried over. A true value allows for hanging punctuation forcing the punctuation to not be carried over and a value of false allows the punctuation to be carried onto the next text line. If this attribute is omitted, then a value of 0, or false is implied. | | |
| indent (Indent) | | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this attribute is omitted, then a value of -342900 is implied. | | |
| latinLnBrk (Latin Line Break) | | | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. | | |
| marL (Left Margin) | | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. | | |
| marR (Right Margin) | | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. | | |
| rtl (Right To Left) | | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. | | |

##### lvl6pPr (List Level 6 Text Style)

This element specifies all paragraph level text properties for all elements that have the attribute lvl="5". There are a total of 9 level text property elements allowed, levels 0-8. It is recommended that the order in which this and other level property elements are specified be in order of increasing level. That is lvl2pPr should come before lvl3pPr. This allows the lower level properties to take precedence over the higher level ones because they are parsed first.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | **Description** | | |
| algn (Alignment) | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. | | |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. |
| fontAlgn (Font Alignment) | Determines where vertically on a line of text the actual words are positioned. This deals with vertical placement of the characters with respect to the baselines. For instance having text anchored to the top baseline, anchored to the bottom baseline, centered in between, etc. To understand this attribute and it's use it is helpful to understand what baselines are. A diagram describing these different cases is shown below. If this attribute is omitted, then a value of base is implied. | | |
| hangingPunct (Hanging | Specifies whether punctuation is to be forcefully laid out on a line of text or put on a different line of text. That is, if there is punctuation at the end of a run of text that should be carried over to a separate line does it actually get carried over. A true value allows for hanging punctuation forcing the punctuation to not be carried over and a value of false allows the punctuation to be carried onto the next text line. If this attribute is omitted, then a value of 0, or false is implied. | |
| indent (Indent) | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this attribute is omitted, then a value of -342900 is implied. | |
| latinLnBrk (Latin Line Break) | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. |
| marL (Left Margin) | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. | |
| marR (Right Margin) | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. | |
| rtl (Right To Left) | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. | |

##### lvl7pPr (List Level 7 Text Style)

This element specifies all paragraph level text properties for all elements that have the attribute lvl="6". There are a total of 9 level text property elements allowed, levels 0-8. It is recommended that the order in which this and other level property elements are specified be in order of increasing level. That is lvl2pPr should come before lvl3pPr. This allows the lower level properties to take precedence over the higher level ones because they are parsed first.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | **Description** | | |
| algn (Alignment) | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. | | |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. |
| fontAlgn (Font Alignment) | Determines where vertically on a line of text the actual words are positioned. This deals with vertical placement of the characters with respect to the baselines. For instance having text anchored to the top baseline, anchored to the bottom baseline, centered in between, etc. To understand this attribute and it's use it is helpful to understand what baselines are. A diagram describing these different cases is shown below. If this attribute is omitted, then a value of base is implied. | | |
| hangingPunct (Hanging | Specifies whether punctuation is to be forcefully laid out on a line of text or put on a different line of text. That is, if there is punctuation at the end of a run of text that should be carried over to a separate line does it actually get carried over. A true value allows for hanging punctuation forcing the punctuation to not be carried over and a value of false allows the punctuation to be carried onto the next text line. If this attribute is omitted, then a value of 0, or false is implied. | |
| indent (Indent) | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this attribute is omitted, then a value of -342900 is implied. | |
| latinLnBrk (Latin Line Break) | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. |
| marL (Left Margin) | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. | |
| marR (Right Margin) | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. | |
| rtl (Right To Left) | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. | |

##### lvl8pPr (List Level 8 Text Style)

This element specifies all paragraph level text properties for all elements that have the attribute lvl="7". There are a total of 9 level text property elements allowed, levels 0-8. It is recommended that the order in which this and other level property elements are specified be in order of increasing level. That is lvl2pPr should come before lvl3pPr. This allows the lower level properties to take precedence over the higher level ones because they are parsed first.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | **Description** | | |
| algn (Alignment) | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. | | |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. |
| fontAlgn (Font Alignment) | Determines where vertically on a line of text the actual words are positioned. This deals with vertical placement of the characters with respect to the baselines. For instance having text anchored to the top baseline, anchored to the bottom baseline, centered in between, etc. To understand this attribute and it's use it is helpful to understand what baselines are. A diagram describing these different cases is shown below. If this attribute is omitted, then a value of base is implied. | | |
| hangingPunct (Hanging | Specifies whether punctuation is to be forcefully laid out on a line of text or put on a different line of text. That is, if there is punctuation at the end of a run of text that should be carried over to a separate line does it actually get carried over. A true value allows for hanging punctuation forcing the punctuation to not be carried over and a value of false allows the punctuation to be carried onto the next text line. If this attribute is omitted, then a value of 0, or false is implied. | |
| indent (Indent) | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this attribute is omitted, then a value of -342900 is implied. | |
| latinLnBrk (Latin Line Break) | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. |
| marL (Left Margin) | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. | |
| marR (Right Margin) | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. | |
| rtl (Right To Left) | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. | |

##### lvl9pPr (List Level 9 Text Style)

This element specifies all paragraph level text properties for all elements that have the attribute lvl="8". There are a total of 9 level text property elements allowed, levels 0-8. It is recommended that the order in which this and other level property elements are specified be in order of increasing level. That is lvl2pPr should come before lvl3pPr. This allows the lower level properties to take precedence over the higher level ones because they are parsed first.

|  |  |  |  |
| --- | --- | --- | --- |
| **Attributes** | **Description** | | |
| algn (Alignment) | Specifies the alignment that is to be applied to the paragraph. Possible values for this include left, right, centered, justified and distributed. If this attribute is omitted, then a value of left is implied. | | |
| defTabSz (Default Tab Size) | Specifies the default size for a tab character within this paragraph. This attribute should be used to describe the spacing of tabs within the paragraph instead of a leading indentation tab. For indentation tabs there are the marL and indent attributes to assist with this. |
| eaLnBrk (East Asian Line Break) | Specifies whether an East Asian word can be broken in half and wrapped onto the next line without a hyphen being added. To determine whether an East Asian word can be broken the presentation application would use the kinsoku settings here. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. That is it is not present within the existence of normal breakable East Asian words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. |
| fontAlgn (Font Alignment) | Determines where vertically on a line of text the actual words are positioned. This deals with vertical placement of the characters with respect to the baselines. For instance having text anchored to the top baseline, anchored to the bottom baseline, centered in between, etc. To understand this attribute and it's use it is helpful to understand what baselines are. A diagram describing these different cases is shown below. If this attribute is omitted, then a value of base is implied. | | |
| hangingPunct (Hanging | Specifies whether punctuation is to be forcefully laid out on a line of text or put on a different line of text. That is, if there is punctuation at the end of a run of text that should be carried over to a separate line does it actually get carried over. A true value allows for hanging punctuation forcing the punctuation to not be carried over and a value of false allows the punctuation to be carried onto the next text line. If this attribute is omitted, then a value of 0, or false is implied. | |
| indent (Indent) | Specifies the indent size that is applied to the first line of text in the paragraph. An indentation of 0 is considered to be at the same location as marL attribute. If this attribute is omitted, then a value of -342900 is implied. | |
| latinLnBrk (Latin Line Break) | Specifies whether a Latin word can be broken in half and wrapped onto the next line without a hyphen being added. This attribute is to be used specifically when there is a word that cannot be broken into multiple pieces without a hyphen. It is not present within the existence of normal breakable Latin words but is when a special case word arises that should not be broken for a line break. If this attribute is omitted, then a value of 1 or true is implied. | | |
| lvl (Level) | Specifies the particular level text properties that this paragraph follows. The value for this attribute is numerical and formats the text according to the corresponding level paragraph properties that are listed within the lstStyle element. Since there are nine separate level properties defined, this tag has an effective range of 0-8 = 9 available values. |
| marL (Left Margin) | Specifies the left margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marL attributes are additive with respect to the text position. If this attribute is omitted, then a value of 347663 is implied. | |
| marR (Right Margin) | Specifies the right margin of the paragraph. This is specified in addition to the text body inset and applies only to this text paragraph. That is the text body inset and the marR attributes are additive with respect to the text position. If this attribute is omitted, then a value of 0 is implied. | |
| rtl (Right To Left) | Specifies whether the text is right-to-left or left-to-right in its flow direction. If this attribute is omitted, then a value of 0, or left-to-right is implied. | |

#### Font Substitution

If any DrawingML element references a font and an appropriate format of the font is not stored within the document, the process of finding a suitable alternative font is known as *font substitution*.

### Tables

This section contains information regarding the definition of a table within DrawingML. The following image is an example table within DrawingML.

#### cell3D (Cell 3-D)

This element specifies a set of properties which dictate the 3-D appearance of a given cell in a table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| prstMaterial (Preset Material) | Specifies a material type which is used to define the material characteristics of the cell. The material properties, combined with the lighting characteristics of the scene in define the final look and feel of the 3-D appearance of the cell. |

#### gridCol (Table Grid Column)

This element specifies the width of a given column within a table. For each column in a table, there is an associated table grid column defining the width of the column.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| w (Width) | The width of the column in EMUs. |

#### header (Header Cell Reference)

This element specifies a reference, using a unique identifier, to a table header cell that is associated with the current table cell. The identifier representing the reference shall be stored on this element’s val attribute and is used to reference the unique identifier value of a table header cell. The contents of the table header cell designated by a specific unique identifier shall be used as the table header information associated with the table cell that references that specific unique identifier.

#### headers (Header Cells Associated With Table Cell)

This element specifies the list of header cells, as specified by children header elements, that provide header information associated with the current table cell. Each header cell shall specify a unique identifier, as specified.

#### lnB (Bottom Border Line Properties)

This element defines the line properties associated with the bottom border of a given cell.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Stroke Alignment) | Specifies the alignment to be used for the underline stroke. |
| cap (Line Ending Cap Type) | Specifies the ending caps that should be used for this line. [*Note*: Examples of cap types are rounded, flat, etc. *end note*] If this attribute is omitted, than a value of square is assumed. |
| cmpd (Compound | Specifies the compound line type to be used for the underline stroke. If this attribute is omitted, then a value of sng is assumed. |
| w (Line Width) | Specifies the width to be used for the underline stroke. If this attribute is omitted, then a value of 0 is assumed. |

#### lnBlToTr (Bottom-Left to Top-Right Border Line Properties)

This element defines the line properties associated with the diagonal line from the bottom left corner of the cell to the top right corner.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Stroke | Specifies the alignment to be used for the underline stroke. |
| cap (Line Ending Cap Type) | Specifies the ending caps that should be used for this line. [*Note*: Examples of cap types are rounded, flat, etc. *end note*] If this attribute is omitted, than a value of square is assumed. |
| cmpd (Compound | Specifies the compound line type to be used for the underline stroke. If this attribute is omitted, then a value of sng is assumed. |
| w (Line Width) | Specifies the width to be used for the underline stroke. If this attribute is omitted, then a value of 0 is assumed. |

#### lnL (Left Border Line Properties)

This element defines the line properties associated with the left border of a cell

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Stroke Alignment) | Specifies the alignment to be used for the underline stroke. |
| cap (Line Ending Cap Type) | Specifies the ending caps that should be used for this line. [*Note*: Examples of cap types are rounded, flat, etc. *end note*] If this attribute is omitted, than a value of square is assumed. |
| cmpd (Compound | Specifies the compound line type to be used for the underline stroke. If this attribute is omitted, then a value of sng is assumed. |
| w (Line Width) | Specifies the width to be used for the underline stroke. If this attribute is omitted, then a value of 0 is assumed. |

#### lnR (Right Border Line Properties)

This element defines the line properties associated with right border of a cell.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Stroke Alignment) | Specifies the alignment to be used for the underline stroke. |
| cap (Line Ending Cap Type) | Specifies the ending caps that should be used for this line. [*Note*: Examples of cap types are rounded, flat, etc. *end note*] If this attribute is omitted, than a value of square is assumed. |
| cmpd (Compound | Specifies the compound line type to be used for the underline stroke. If this attribute is omitted, then a value of sng is assumed. |
| w (Line Width) | Specifies the width to be used for the underline stroke. If this attribute is omitted, then a value of 0 is assumed. |

#### lnT (Top Border Line Properties)

This element defines the line properties associated with the top border of a cell.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Stroke Alignment) | Specifies the alignment to be used for the underline stroke. |
| cap (Line Ending Cap Type) | Specifies the ending caps that should be used for this line. [*Note*: Examples of cap types are rounded, flat, etc. *end note*] If this attribute is omitted, than a value of square is assumed. |
| cmpd (Compound | Specifies the compound line type to be used for the underline stroke. If this attribute is omitted, then a value of sng is assumed. |
| w (Line Width) | Specifies the width to be used for the underline stroke. If this attribute is omitted, then a value of 0 is assumed. |

#### lnTlToBr (Top-Left to Bottom-Right Border Line Properties)

This element defines the line properties associated with the diagonal line from the top left corner of the cell to the bottom right corner.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| algn (Stroke Alignment) | Specifies the alignment to be used for the underline stroke. |
| cap (Line Ending Cap Type) | Specifies the ending caps that should be used for this line. [*Note*: Examples of cap types are rounded, flat, etc. *end note*] If this attribute is omitted, than a value of square is assumed. |
| cmpd (Compound | Specifies the compound line type to be used for the underline stroke. If this attribute is omitted, then a value of sng is assumed. |
| w (Line Width) | Specifies the width to be used for the underline stroke. If this attribute is omitted, then a value of 0 is assumed. |

#### tableStyle (Table Style)

This element specifies a particular table style. Fourteen elements make up the styling information of a given table style. These fourteen elements work together to provide visual formatting options for on/off states of the following toggles:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| styleId (Style ID) | Specifies a GUID identifying the table style in a unique manner. |
| styleName (Name) | Specifies the name of the table style which can show up in the user interface identifying the style to a user. |

#### tableStyleId (Table Style ID)

This element defines the table style which is currently applied to the table by referencing the styleId attribute of the tableStyle element.

#### tbl (Table)

This element is the root element for a table. Within this element is contained everything that one would need to define a table within DrawingML.

#### tblGrid (Table Grid)

This element defines a list of table column (§21.1.3.2) elements. There should be a table column (§21.1.3.2) element for every column held within the table.

#### tblPr (Table Properties)

This element defines the properties of a table on the whole. Within this element are many visual modifications that can be applied to the table.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| bandCol (Banded Columns) | Enables or disables the banded column formatting for a table style. A value of1 or true enables the banded column formatting defined in the table style. The attribute defaults to off if it is not specified. | |
| bandRow (Banded Rows) | Enables or disables the banded row formatting for a table style. A value of 1 or true enables the banded row formatting defined in the table style. The attribute defaults to false if it is not specified. | |
| firstCol (First Column) | Enables or disables the first column formatting for a table style. A value of 1 or true enables the first column formatting defined in the table style. The attribute defaults to false if it is not specified. | |
| firstRow (First Row) | Enables or disables the first row formatting for a table style. A value of 1 or true enables the first row formatting defined in the table style. The attribute defaults to false if it is not specified. |
| lastCol (Last Column) | Enables or disables the last column formatting for a table style. A value of 1 or true enables the last column formatting defined in the table style. The attribute defaults to false if it is not specified. |
| lastRow (Last Row) | Enables or disables the last row formatting for a table style. A value of 1 or true enables the last row formatting defined in the table style. The attribute defaults to |
| rtl (Right-to-Left) | Defines enables the right-to-left settings of a table. If the value of rtl is 1 or true , then the table is laid out from the right-to-left rather than the default left-to-right. |

#### tc (Table Cell)

This element defines a cell within the table. The table cell holds a text body that actually contains the data held within the cell along with the properties of the table cell which hold formatting options associated with the cell.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| gridSpan (Grid Span) | Specifies the number of columns that a merged cell spans. This is used in combination with the hMerge attribute on other cells in order to specify the beginning cell of a horizontal merge. |
| hMerge (Horizontal Merge) | When this attribute is set to 1 or true , then this table cell is to be merged with the previous horizontal table cell when the table is created. |
| id (Table Cell Identifier) | Specifies a unique identifier for the current table cell. This identifier shall be unique within the table, and is used to identify this table cell as a header cell for other cells within the table, using the headers child element. |
| rowSpan (Row Span) | Specifies the number of rows that a merged cell spans. This is used in combination with the vMerge attribute on other cells in order to specify the beginning cell of a horizontal merge. |
| vMerge (Vertical Merge) | When this attribute is set to 1 or true , then this table cell is to be merged with the previous vertical table cell when the table is created. |

#### tcPr (Table Cell Properties)

This element defines the formatting properties associated with a cell. The formatting options which are available to be adjusted range from the line types used for the borders to the cell fill to the margins associated with the layout of the text in the cell.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| anchor (Anchor) | Defines the alignment of the text vertically within the cell. | |
| anchorCtr (Anchor Center) | When this attribute is 1 or true , it modifies the anchor attribute. This attribute centeraligns the text box itself which allows for text to be left aligned along the center of the cell for example. | |
| horzOverflow | Specifies the clipping behavior of the cell. The two options here allow for the text to be clipped and out of view when outside of the bounds of the cell, or for the text to remain visible and overflow outside of the cell. | |
| marB (Bottom Margin) | Specifies the bottom margin of the cell. The value specified in this attribute is the distance to offset from the bottom of the cell. | |
| marL (Left Margin) | This attribute specifies the left margin of the cell. The value specified in this attribute is the distance to offset from the left of the cell in EMU's. |
| marR (Right Margin) | This attribute specifies the right margin of the cell. The value specified in this attribute is the distance to offset from the right of the cell in EMU's. |
| marT (Top Margin) | This attribute specifies the top margin of the cell. The value specified in this attribute is the distance to offset from the top of the cell in EMU's. |
| vert (Text Direction) | Defines the text direction within the cell. |

#### tr (Table Row)

This element defines a row in a table. A row as defined in a table is simply a listing of table cells (§21.1.3.16). There is a table row element defined for every row in the table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| h (Height) | Defines the height of the row in the table. |

## DrawingML - Charts

The chart namespace in DrawingML is for representing visualizations of numeric data with column charts, pie charts, scatter charts, or other types of charts.

### Elements

In DrawingML, charts define a visualization of numeric data. The definition includes where the data shall come from, a cache of the data, and how the data shall be represented graphically. Other DrawingML elements are reused to define aspects of the formatting of the visualization.

#### applyToEnd (Apply to End)

This element specifies the picture shall be applied to the end of the point or series.

#### applyToFront (Apply To Front)

This element specifies the picture shall be applied to the front of the point or series.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### applyToSides (Apply To Sides)

This element specifies the picture shall be applied to the sides of the point or series.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### area3DChart (3D Area Charts)

This element specifies the 3-D area series on this chart.

#### areaChart (Area Charts)

This element specifies the 2-D area series on this chart.

#### auto (Automatic Category Axis)

This element specifies that this axis is a date or text axis based on the data that is used for the axis labels, not a specific choice.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### autoTitleDeleted (Auto Title Is Deleted)

This element specifies the title shall not be shown for this chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### autoUpdate (Update Automatically)

This element specifies the external data is updated automatically when the document containing the chart is opened.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### axId (Axis ID)

When specified as a child element of valAx, dateAx, catAx, or serAx, this element specifies the identifier for the axis. When specified as a child element of a chart, this element specifies the identifier of an axis that defines the coordinate space of the chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Integer Value) | Specifies that the contents of this attribute contain an integer number. |

#### axPos (Axis Position)

This element specifies the position of the axis on the chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Axis Position Value) | Specifies the position of the axis on the chart. |

#### backWall (Back Wall)

This element specifies the back wall of the chart.

#### backward (Backward)

This element specifies the number of categories (or units on a scatter chart) that the trend line extends before the data for the series that is being trended. On scatter and non-scatter charts, the value shall be any nonnegative value.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### bandFmt (Band Format)

This element specifies the formatting band of a surface chart.

#### bandFmts (Band Formats)

This element contains a collection of formatting bands for a surface chart indexed from low to high.

#### bar3DChart (3D Bar Charts)

This element contains the 3-D bar or column series on this chart.

#### barChart (Bar Charts)

This element contains the 2-D bar or column series on this chart.

#### barDir (Bar Direction)

This element specifies whether the series form a bar (horizontal) chart or a column (vertical) chart

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Bar Direction Value) | Specifies the direction of the series. |

#### baseTimeUnit (Base Time Unit)

This element specifies the smallest time unit that is represented on the date axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Time Unit Value) | Specifies the time unit for the tick marks. |

#### bubble3D (3D Bubble)

This element specifies that the bubbles have a 3-D effect applied to them.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### bubbleChart (Bubble Charts)

This element contains the bubble series on this chart.

#### bubbleScale (Bubble Scale)

This element specifies the scale factor for the bubble chart. This element can be a percentage value from 0 to 300, corresponding to a percentage of the default size.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Bubble Scale Value) | Specifies how to scale bubbles on a bubble chart. |

#### bubbleSize (Bubble Size)

This element specifies the data for the sizes of the bubbles on the bubble chart.

#### builtInUnit (Built in Display Unit Value)

This element specifies the display unit is one of the built in values.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Built In Unit Value) | Specifies the display unit scaling applied to the axis. |

#### cat (Category Axis Data)

This element specifies the data used for the category axis.

#### catAx (Category Axis Data)

This element specifies the category axis of the chart.

#### chart (Reference to Chart Part)

This element specifies the chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship | Specifies the relationship ID for the relationship for this Chart or Chart Drawing part. The type of relationship needed is specified by the parent element. |

#### chart (Chart)

This element specifies the chart.

#### chartObject (Chart Object)

This element specifies that the chart cannot be edited by the user

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### chartSpace (Chart Space)

This element specifies overall settings for a single chart, and is the root node for the chart part.

#### clrMapOvr (Color Map Override)

This element represents color mapping information. It is used to override the applications color mapping if the user has selected keep source formatting after a copy-paste.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| accent1 (Accent 1) | Specifies a color defined which is associated as the accent 1 color. |
| accent2 (Accent 2) | Specifies a color defined which is associated as the accent 2 color. |
| accent3 (Accent 3) | Specifies a color defined which is associated as the accent 3 color. |
| accent4 (Accent 4) | Specifies a color defined which is associated as the accent 4 color. |
| accent5 (Accent 5) | Specifies a color defined which is associated as the accent 5 color. |
| accent6 (Accent 6) | Specifies a color defined which is associated as the accent 6 color. |
| bg1 (Background 1) | A color defined which is associated as the first background color. |
| bg2 (Background 2) | Specifies a color defined which is associated as the second background color. |
| folHlink (Followed | Specifies a color defined which is associated as the color for a followed hyperlink. |
| hlink (Hyperlink) | Specifies a color defined which is associated as the color for a hyperlink. |
| tx1 (Text 1) | Specifies a color defined which is associated as the first text color. |
| tx2 (Text 2) | Specifies a color defined which is associated as the second text color. |

#### crossAx (Crossing Axis ID)

This element specifies the ID of axis that this axis crosses. For instance, a category axis might cross a value axis, and the category axis's crossAx would contain the ID of the value axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Integer Value) | Specifies that the contents of this attribute contain an integer number. |

#### crossBetween (Cross Between)

This element specifies whether the value axis crosses the category axis between categories.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Cross Between Value) | Specifies whether the value axis crosses the category axis between categories or on categories. |

#### crosses (Crosses)

This element specifies how this axis crosses the perpendicular axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Crosses Value) | Specifies where the axis crosses its perpendicular axis. |

#### crossesAt (Crossing Value)

This element specifies where on the axis the perpendicular axis crosses. The units are dependent on the type of axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### custSplit (Custom Split)

This element contains the custom split information for a pie-of-pie or bar-of-pie chart with a custom split.

#### custUnit (Custom Display Unit)

This element specifies a custom value for the display unit.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### data (Data Cannot Be Changed)

This element specifies that the user cannot change the choice of data used for the chart

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### date1904 (1904 Date System)

This element specifies that the chart uses the 1904 date system. If the 1904 date system is used, then all dates and times shall be specified as a decimal number of days since Dec. 31, 1903. If the 1904 date system is not used, then all dates and times shall be specified as a decimal number of days since Dec. 31, 1899.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### dateAx (Date Axis)

This element specifies a date axis for the chart.

#### delete (Delete)

This element specifies that the chart element specified by its containing element shall be deleted from the chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### depthPercent (Depth Percent)

This element specifies the depth of a 3-D chart as a percentage of the chart width (between 20 and 2000 percent).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Depth Percent Value) | Specifies a percentage value for the property defined by the parent XML element. |

#### dispBlanksAs (Display Blanks As)

This element specifies how blank cells shall be plotted on a chart .

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Display Blanks As Value) | Specifies how blank cells are plotted on the chart. |

#### dispEq (Display Equation)

This element specifies that the equation for the trendline is displayed on the chart (in the same label as the Rsquared value).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### dispRSqr (Display R Squared Value)

This element specifies that the R-squared value of the trendline is displayed on the chart (in the same label as the equation).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### dispUnits (Display Units)

This element specifies the scaling value of the display units for the value axis.

#### dispUnitsLbl (Display Units Label)

This element specifies the display unit label for the value axis in the specified chart.

#### dLbl (Data Label)

This element specifies a data label.

#### dLblPos (Data Label Position)

This element specifies the position of the data label.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Data Label Position Value) | Specifies how the data label is positioned on the chart. |

#### dLbls (Data Labels)

This element serves as a root element that specifies the settings for the data labels for an entire series or the entire chart. It contains child elements that specify the specific formatting and positioning settings.

#### doughnutChart (Doughnut Charts)

This element contains the doughnut chart series.

#### downBars (Down Bars)

This element specifies the down bars.

#### dPt (Data Point)

This element specifies a single data point.

#### dropLines (Drop Lines)

This element specifies drop lines.

#### dTable (Data Table)

This element specifies a data table.

#### errBars (Error Bars)

This element specifies error bars. The errValType element controls whether the minus, plus, or val elements are used.

#### errBarType (Error Bar Type)

This element specifies the style of the error bars - positive, negative, or both.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Error Bar Type Value) | Specifies the style of error bars. |

#### errDir (Error Bar Direction)

This element specifies the direction of the error bars.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Error Bar Direction Value) | Specifies the direction of the error bars. |

#### errValType (Error Bar Value Type)

This element specifies the type of values used to determine the length of the error bars.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Error Bar Type Value) | Specifies the type of values of the error bars. |

#### evenFooter (Even Footer)

This element specifies the footer to use on even numbered pages. (See §18.3.1.38 for more information.) The possible values for this element are defined by the ST\_Xstring simple type (§22.9.2.19).

|  |  |
| --- | --- |
| Attributes | Description |
| xml:space (Content | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. |

#### evenHeader (Even Header)

This element specifies the header to use on even numbered pages. (See §18.3.1.39 for more information.)

|  |  |
| --- | --- |
| Attributes | Description |
| xml:space (Content | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. |

#### explosion (Explosion)

This element specifies the amount the data point shall be moved from the center of the pie.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Integer Value) | Specifies that the contents of this attribute contain an integer number. |

#### ext (Extension)

This element specifies an extension that is used for future extensions to the current version of DrawingML. This allows for the specifying of currently unknown elements in the future that are used for later versions of generating applications.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| uri (Uniform Resource Identifier) | Specifies the URI, or uniform resource identifier that represents the data stored under this tag. The URI is used to identify the correct 'server' that can process the contents of this tag. |

#### externalData (External Data Relationship)

This element specifies the relationship to the data for this chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship | Specifies the relationship ID for the relationship for this chart. The relationship explicitly targeted by this attribute shall either be of type |

#### extLst (Chart Extensibility)

This element contains tags used for future extensibility of the file format.

#### f (Formula)

This element specifies a reference to source of the data contained in this chart. This shall be used by the spreadsheet application only. A presentation, or word processing application should use the externalData element.

#### firstFooter (First Footer)

This element specifies the footer to use on the first page. (See §18.3.1.41 for more information.) The possible values for this element are defined by the ST\_Xstring simple type (§22.9.2.19).

|  |  |
| --- | --- |
| Attributes | Description |
| xml:space (Content | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. |

#### firstHeader (First Header)

This element specifies the header to use on the first page. (See §18.3.1.42 for more information.)

|  |  |
| --- | --- |
| Attributes | Description |
| xml:space (Content | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. |

#### firstSliceAng (First Slice Angle)

This element specifies the angle of the first pie or doughnut chart slice, in degrees (clockwise from up).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (First Slice Angle Value) | Specifies the angle of the first slice. |

#### floor (Floor)

This element specifies the floor of a 3D chart.

#### fmtId (Format ID)

This element represents a pivot format ID. It serves as a link back to the correct pivotTable which in turn specifies a link that then defines which set of chart format rules apply to this chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Integer Value) | Specifies that the contents of this attribute contain an integer number. |

#### formatCode (Format Code)

This element specifies a string representing the format code to apply. For more information see the SpreadsheetML numFmt element's (§18.8.30) formatCode attribute.

#### formatting (Formatting)

This element specifies that a user cannot change formatting on chart elements.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### forward (Forward)

This element specifies the number of categories (or units on a scatter chart) that the trendline extends after the data for the series that is being trended. On scatter and non-scatter charts, the value shall be any non-negative value.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### gapDepth (Gap Depth)

This element specifies the space between bar or column clusters, as a percentage of the bar or column width.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Gap Size Value) | Specifies that the contents of this attribute contain a gap amount between 0% and 500%. |

#### gapWidth (Gap Width)

This element specifies the space between bar or column clusters, as a percentage of the bar or column width.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Gap Size Value) | Specifies that the contents of this attribute contain a gap amount between 0% and 500%. |

#### grouping (Grouping)

This element specifies the kind of grouping for a column, line, or area chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Grouping | Specifies the grouping value. |

#### grouping (Bar Grouping)

This element specifies the kind of grouping for a bar chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Bar Grouping Value) | Specifies the bar grouping value. |

#### h (Height)

This element specifies the height (if Height Mode is Factor) or bottom (if Height Mode is edge) of the chart element as a fraction of the height of the chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### headerFooter (Header and Footer)

This element specifies the headers and footers that shall be used when the chart is printed. (See §18.3.1.46 for more information.)

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| alignWithMargins | Specifies the header and footer should align with the left and right margins of the chart. |
| differentFirst (Different First) | Specifies the header and footer are different for the first page. |
| differentOddEven | Specifies the header and footer are different on odd-numbered pages and evennumbered pages. |

#### hiLowLines (High Low Lines)

This element specifies the high-low lines for the series.

#### hMode (Height Mode)

This element specifies how to interpret the Height element for this manual layout.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Layout Mode Value) | Specifies the layout mode for the width. |

#### holeSize (Hole Size)

This element specifies the size of the hole in a doughnut chart group.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Hole Size Value) | Specifies that the contents of this attribute contain a hole size between 10% and 90% of the size of the plot area. |

#### hPercent (Height Percent)

This element specifies the height of a 3-D chart as a percentage of the chart width.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Height Percent Value) | Specifies that the contents of this attribute contain a height percent between 5% and 500%. |

#### idx (Index)

This element specifies the index of the containing element. This index shall determine which of the parent's children collection this element applies to.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Integer Value) | Specifies that the contents of this attribute contain an integer number. |

#### intercept (Intercept)

This element specifies the value where the trendline shall cross the y axis. This property shall be supported only when the trendline type is exp, linear, or poly.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### invertIfNegative (Invert if Negative)

This element specifies the parent element shall invert its colors if the value is negative.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### lang (Editing Language)

This element specifies the primary editing language which was use when this chart was last modified.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Language Code) | Specifies a language tag as defined by RFC 3066. See simple type for additional information. |

#### layout (Layout)

This element specifies how the chart element is placed on the chart.

#### layoutTarget (Layout Target)

This element specifies whether to layout the plot area by its inside (not including axis and axis labels) or outside (including axis and axis labels).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Layout Target Value) | Specifies the layout target value. |

#### lblAlgn (Label Alignment)

This element specifies the text alignment for the tick labels on the axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Label Alignment Value) | Specifies the label alignment. |

#### lblOffset (Label Offset)

This element specifies the distance of labels from the axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Label Offset Value) | Specifies the distance of labels from the axis. Shall contain a percentage between 0% and 1000%. |

#### leaderLines (Leader Lines)

This element specifies the leader lines for data labels.

#### legend (Legend)

This element specifies the legend.

#### legendEntry (Legend Entry)

This element specifies a legend entry.

#### legendPos (Legend Position)

This element specifies the position of the legend.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Legend Position Value) | Specifies the position of the legend. |

#### line3DChart (3D Line Charts)

This element contains the 3-D line chart series.

#### lineChart (Line Charts)

This element contains the 2-D line chart series.

#### logBase (Logarithmic Base)

This element specifies the logarithmic base for a logarithmic axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Logarithmic Base Value) | Specifies the logarithmic base for a logarithmic axis. Shall contain a floating point value greater than or equal to 2. |

#### lvl (Level)

This element specifies data for a single level of labels for a category axis.

#### majorGridlines (Major Gridlines)

This element specifies major gridlines.

#### majorTickMark (Major Tick Mark)

This element specifies the major tick marks.

|  |  |
| --- | --- |
| Attributes | Description |
| val (Tick Mark Value) | Specifies the major tick mark position. |

#### majorTimeUnit (Major Time Unit)

This element specifies the time unit for major tick marks.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Time Unit Value) | Specifies the time unit for the tick marks. |

#### majorUnit (Major Unit)

This element specifies the distance between major ticks.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Major Unit Value) | Specifies the distance between major ticks. Shall contain a positive floating-point number. |

#### manualLayout (Manual Layout)

This element specifies the exact position of a chart element.

#### marker (Show Marker)

This element is a Boolean that, when true, specifies that the marker shall be shown.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### marker (Marker)

This element specifies a data marker.

#### max (Maximum)

This element specifies the maximum value of the axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### min (Minimum)

This element specifies the minimum value of the axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### minorGridlines (Minor Gridlines)

This element specifies the minor gridlines.

#### minorTickMark (Minor Tick Mark)

This element specifies the minor tick marks for the axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Tick Mark Value) | Specifies the minor tick mark position. |

#### minorTimeUnit (Minor Time Unit)

This element specifies the time unit for the minor tick marks.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Time Unit Value) | Specifies the time unit for the tick marks. |

#### minorUnit (Minor Unit)

This element specifies the distance between minor tick marks.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Minor Unit Value) | Specifies the distance between minor tick marks. Shall contain a positive floating-point number. |

#### minus (Minus)

This element specifies the error bar value in the negative direction. It shall be used only when the errValType is cust.

#### multiLvlStrCache (Multi Level String Cache)

This element specifies the last data shown on the chart for a category axis.

#### multiLvlStrRef (Multi Level String Reference)

This element specifies a reference to data for the category axis with a cache of the last values used.

#### name (Trendline Name)

This element specifies the name of the trendline.

#### name (Pivot Name)

This element specifies the name of the pivot table to get the data for the chart from.

#### noEndCap (No End Cap)

This element specifies an end cap is not drawn on the error bars.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### noMultiLvlLbl (No Multi-level Labels)

This element specifies the labels shall be shown as flat text. If this element is not included or is set to false, then the labels shall be drawn as a hierarchy.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### numCache (Number Cache)

This element specifies the last data shown on the chart for a series.

#### numFmt (Number Format)

This element specifies number formatting for the parent element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| formatCode (Number Format | This element specifies a string representing the format code to apply. For more information see the SpreadsheetML numFmt element's (§18.8.30) formatCode attribute. |
| sourceLinked | Specifies a boolean value for the property defined by the parent XML element. |

#### numLit (Number Literal)

This element specifies a set of numbers used for the parent element.

#### numRef (Number Reference)

This element specifies a reference to numeric data with a cache of the last values used.

#### oddFooter (Odd Footer)

This element specifies the footer to use on odd numbered pages. (See §18.3.1.57 for more information.)

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| xml:space (Content | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. |

#### oddHeader (Odd Header)

This element specifies the header to use on odd numbered pages. (See §18.3.1.58 for more information.) The possible values for this element are defined by the ST\_Xstring simple type (§22.9.2.19).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| xml:space (Content | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. |

#### ofPieChart (Pie of Pie or Bar of Pie Charts)

This element contains the pie of pie or bar of pie series on this chart. Only the first series shall be displayed. The splitType element shall determine whether the splitPos and custSplit elements apply.

#### ofPieType (Pie of Pie or Bar of Pie Type)

This element specifies whether this chart is pie of pie or bar of pie.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Pie of Pie or Bar of Pie Type Value) | Specifies the type of pie of pie or bar of pie chart. |

#### order (Order)

This element specifies the order of the series in the collection. It is 0 based.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Integer Value) | Specifies that the contents of this attribute contain an integer number. |

#### order (Polynomial Trendline Order)

This element specifies the order of the polynomial trend line. It is ignored for other trend line types.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Order Value) | Specifies that the contents of this attribute contain an integer between 2 and 6. |

#### orientation (Axis Orientation)

This element specifies the stretching and stacking of the picture on the data point, series, wall, or floor.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Orientation Value) | Specifies the orientation of the axis. |

#### overlap (Overlap)

This element specifies how much bars and columns shall overlap on 2-D charts.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Overlap Value) | Specifies how much bars and columns shall overlap on 2-D charts. Shall contain a percentage between -100% and 100%. |

#### overlay (Overlay)

This element specifies that other chart elements shall be allowed to overlap this chart element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### pageMargins (Page Margins)

This element specifies the page margins for a chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| b (Bottom) | Specifies the bottom page margin in inches. |
| footer (Footer) | Specifies the footer margin in inches. |
| header (Header) | Specifies the header margin in inches. |
| l (Left) | Specifies the left page margin in inches. |
| r (Right) | Specifies the right page margin in inches. |
| t (Top) | Specifies the top page margin in inches. |

#### pageSetup (Page Setup)

This element defines the page setup for the chart.

|  |  |  |
| --- | --- | --- |
| Attributes | | Description |
| blackAndWhite | | Specifies the page shall print in black and white. |
| copies (Copies) | | Specifies the number of copies that shall be printed. |
| draft (Draft) | | Specifies the page shall be printed in draft mode. |
| firstPageNumber | | Specifies the page number. |
| horizontalDpi | | Specifies the horizontal resolution to print in dots per inch. |
| orientation (Orientation) | | Specifies the orientation of the paper. |
| paperHeight (Paper Height) | | Height of custom paper as a number followed by a unit identifier. [*Example*: 297mm, 11in *end example*] |
| paperSize (Paper Size) | | Specifies the paper size according to the following table. |
| paperWidth (Paper Width) | Width of custom paper as a number followed by a unit identifier. [*Example*: 21cm, 8.5in *end example*] | |
| useFirstPageNumb | Specifies to use the first page number instead of automatically generating a page number. | |
| verticalDpi | Specifies the vertical resolution to print in dots per inch. | |

#### period (Period)

This element specifies the period of the trend line for a moving average trend line. It is ignored for other trend line variants.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Period Value) | Specifies the period of the trend line for a moving average trend line. Shall contain an integer between 2 and 255. |

#### perspective (Perspective)

This element specifies the field of view angle for the 3-D chart. This element is ignored if Right Angle Axes is true.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Perspective | Specifies the field of view angle for the 3-D chart. Shall contain an integer between 0 |
| Value) | and 240, whose unit is one-half degrees. |

#### pictureFormat (Picture Format)

This element specifies the stretching and stacking of the picture on the data point, series, wall, or floor.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Picture Format Value) | Specifies the stretching and stacking of the picture. |

#### pictureOptions (Picture Options)

This element specifies the picture to be used on the data point, series, wall, or floor.

#### pictureStackUnit (Picture Stack Unit)

This element specifies the unit for each picture on the chart. This element applies only if the Picture Format is Stack and Scale.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Picture Stack Unit) | Specifies the unit for each picture on the chart. Shall contain a floating point number. |

#### pie3DChart (3D Pie Charts)

This element contains the 3-D pie series for this chart.

#### pieChart (Pie Charts)

This element contains the 2-D pie series for this chart.

#### pivotFmt (Pivot Format)

This element contains a set of formatting to be applied to the chart that is based on a pivotTable.

#### pivotFmts (Pivot Formats)

This element contains a collection of formatting bands for a surface chart indexed from low to high.

#### pivotSource (Pivot Source)

This element specifies the source pivot table for a pivot chart.

#### plotArea (Plot Area)

This element specifies the plot area of the chart.

#### plotVisOnly (Plot Visible Only)

This element specifies that only visible cells should be plotted on the chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### plus (Plus)

This element specifies the error bar value in the positive direction. It shall be used only when the errValType is cust.

#### printSettings (Print Settings)

This element specifies the print settings for the chart.

#### protection (Protection)

This element specifies protection for the chart. If the chart is on a protected worksheet or chart sheet, then these settings shall control how a user is able to interact with the chart.

#### pt (Numeric Point)

This element specifies data for a particular data point.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| formatCode (Number Format) | A string representing the format code to apply. For more information see see the SpreadsheetML numFmt element's (§18.8.30) formatCode attribute. |
| idx (Index) | The index of the series in the collection |

#### pt (String Point)

This element specifies string data for a specific data point.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| idx (Index) | A 0 based index into a set of points. Represents the data point number this data is for. |

#### ptCount (Point Count)

This element contains the number of values in the cache.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Integer Value) | Specifies that the contents of this attribute contain an integer number. |

#### radarChart (Radar Charts)

This element contains the radar chart series on this chart.

#### radarStyle (Radar Style)

This element specifies what type of radar chart shall be drawn.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Radar Style Value) | Specifies the style of the radar chart. |

#### rAngAx (Right Angle Axes)

This element specifies that the chart axes are at right angles, rather than drawn in perspective. Applies only to 3D charts.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### rich (Rich Text)

This element contains a string with rich text formatting.

#### rotX (X Rotation)

This element specifies the amount a 3-D chart shall be rotated in the X direction.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (X Rotation Value) | Specifies the amount a 3-D chart shall be rotated in the X direction. Shall contain an integer between -90 and 90. |

#### rotY (Y Rotation)

This element specifies the amount a 3-D chart shall be rotated in the Y direction.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Y Rotation Value) | Specifies the amount a 3-D chart shall be rotated in the Y direction. Shall contain an integer between 0 and 360. |

#### roundedCorners (Rounded Corners)

This element specifies the chart area shall have rounded corners.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### scaling (Scaling)

This element contains additional axis settings.

#### scatterChart (Scatter Charts)

This element contains the scatter chart series for this chart.

#### scatterStyle (Scatter Style)

This element specifies the kind of lines for the scatter chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Scatter Style Value) | Specifies the style of the scatter chart. |

#### secondPiePt (Second Pie Point)

This element specifies a data point that shall be drawn in the second pie or bar in a pie of pie or bar of pie chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Integer Value) | Specifies that the contents of this attribute contain an integer number. |

#### secondPieSize (Second Pie Size)

This element specifies the size of the second pie or bar of a pie of pie chart or a bar of pie chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Second Pie Size Value) | Specifies the second pie or bar of a pie of pie chart or a bar of pie chart, as a percentage of the size of the first pie. Shall contain a percentage between 5% and 200%. |

#### selection (Selection)

This element specifies the chart elements are protected from selection.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### separator (Separator)

This element specifies text that shall be used to separate the parts of a data label. The default is a comma, except for pie charts showing only category name and percentage, when a line break shall be used instead.

#### ser (Scatter Chart Series)

This element specifies a series on a scatter chart.

#### ser (Area Chart Series)

This element specifies a series on an area chart.

#### ser (Radar Chart Series)

This element specifies a series on a radar chart.

#### ser (Bar Chart Series)

This element specifies a series on a bar chart.

#### ser (Line Chart Series)

This element specifies a series on a line chart.

#### ser (Pie Chart Series)

This element specifies a series on a doughnut or pie chart.

#### ser (Surface Chart Series)

This element specifies a series on a surface chart.

#### ser (Bubble Chart Series)

This element specifies a series on a bubble chart.

#### serAx (Series Axis)

This element specifies a series axis for the chart.

#### serLines (Series Lines)

This element specifies series lines for the chart.

#### shape (Shape)

This element specifies the shape of a series or a 3-D bar chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Shape Value) | Specifies the shape of the series. |

#### showBubbleSize (Show Bubble Size)

This element specifies the bubble size shall be shown in a data label.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showCatName (Show Category Name)

This element specifies that the category name shall be shown in the data label.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showDLblsOverMax (Show Data Labels over Maximum)

This element specifies data labels over the maximum of the chart shall be shown.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showHorzBorder (Show Horizontal Border)

This element specifies the horizontal borders shall be shown in a data table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showKeys (Show Legend Keys)

This element specifies the legend keys shall be shown in a data table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showLeaderLines (Show Leader Lines)

This element specifies leader lines shall be shown for data labels.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showLegendKey (Show Legend Key)

This element specifies legend keys shall be shown in data labels.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showNegBubbles (Show Negative Bubbles)

This element specifies negative sized bubbles shall be shown on a bubble chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showOutline (Show Outline Border)

This element specifies the outline shall be shown on a data table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showPercent (Show Percent)

This element specifies that the percentage shall be shown in a data label.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showSerName (Show Series Name)

This element specifies that the series name shall be shown in a data label.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showVal (Show Value)

This element specifies that the value shall be shown in a data label.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### showVertBorder (Show Vertical Border)

This element specifies the vertical border shall be shown in a data table.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### sideWall (Side Wall)

This element specifies the side wall.

#### size (Size)

This element specifies the size of the marker in points.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Marker Size Value) | Specifies the size of the marker in points. Shall contain an integer between 2 and 72. |

#### sizeRepresents (Size Represents)

This element specifies how the bubble size values are represented on the chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Size Represents Value) | Specifies how the bubble sizes represent the values. |

#### smooth (Smoothing)

This element specifies the line connecting the points on the chart shall be smoothed using Catmull-Rom splines.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### splitPos (Split Position)

This element specifies a value that shall be used to determine which data points are in the second pie or bar on a pie of pie or bar of pie chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### splitType (Split Type)

This element specifies how to determine which data points are in the second pie or bar on a pie of pie or bar of pie chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Split Type Value) | Specifies how to split the data points between the first pie and second pie or bar. |

#### spPr (Shape Properties)

This element specifies the formatting for the parent chart element. The custGeom, prstGeom, scene3d, and xfrm elements are not supported. The bwMode attribute is not supported.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and | Specifies that the picture should be rendered using only black and white coloring. That is the coloring information for the picture should be converted to either black or white when rendering the picture. |

#### stockChart (Stock Charts)

This element contains the collection of stock chart series.

#### strCache (String Cache)

This element specifies the last string data used for a chart.

#### strLit (String Literal)

This element specifies a set of strings used for a chart

#### strRef (String Reference)

This element specifies a reference to data for a single data label or title with a cache of the last values used.

#### style (Style)

This element specifies the style that shall be applied to the chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Style Type) | Specifies the chart style. |

#### surface3DChart (3D Surface Charts)

This element contains the set of 3-D surface series.

#### surfaceChart (Surface Charts)

This element contains the set of 2-D contour charts.

#### symbol (Symbol)

This element specifies the marker that is used for the data points.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Marker Style Value) | Specifies the marker style. |

#### thickness (Thickness)

This element specifies the thickness of the walls or floor as a percentage of the largest dimension of the plot volume.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Integer Value) | Specifies that the contents of this attribute contain a percentage. |

#### tickLblPos (Tick Label Position)

This element specifies the position of the tick labels on the axis.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Tick Label Position Value) | Specifies the tick label position. |

#### tickLblSkip (Tick Label Skip)

This element specifies how many tick labels to skip between label that is drawn.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Tick Skip Value) | Specifies the how many tick labels to skip between label that is drawn. Shall contain an integer greater than or equal to one. |

#### tickMarkSkip (Tick Mark Skip)

This element specifies how many tick marks shall be skipped before the next one shall be drawn.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Tick Skip Value) | Specifies the how many tick marks shall be skipped before the next one shall be drawn. Shall contain an integer greater than or equal to one. |

#### title (Title)

This element specifies a title.

#### trendline (Trendlines)

This element specifies a trendline.

#### trendlineLbl (Trendline Label)

This element specifies the label for the trendline.

#### trendlineType (Trendline Type)

This element specifies the style of the trendline.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Trendline Type Value) | Specifies the trendline style. |

#### tx (Chart Text)

This element specifies text to use on a chart, including rich text formatting.

#### tx (Series Text)

This element specifies text for a series name, without rich text formatting.

#### txPr (Text Properties)

This element specifies text formatting. The lstStyle element is not supported.

#### upBars (Up Bars)

This element specifies the up bars on the chart.

#### upDownBars (Up/Down Bars)

This element specifies the up and down bars.

#### userInterface (User Interface)

This element specifies that the protection applies to the user interface only, and not to changes made through the object model.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### userShapes (User Shapes)

This element shall specify the shapes drawn on top of the chart.

#### userShapes (Reference to Chart Drawing Part)

This element specifies a relationship to a separate part which contains a drawing to be drawn on top of the chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| id (Relationship | Specifies the relationship ID for the relationship for this Chart or Chart Drawing part. The type of relationship needed is specified by the parent element. |

#### v (Numeric Value)

This element specifies a numeric value.

#### v (Text Value)

This element specifies a text value for a category axis label or a series name.

#### val (Values)

This element specifies the data values which shall be used to define the location of data markers on a chart.

#### val (Error Bar Value)

This element specifies a value which is used with the errBar element to determine the length of the error bars.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### valAx (Value Axis)

This element specifies a value axis.

#### varyColors (Vary Colors by Point)

This element specifies that each data marker in the series has a different color.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### view3D (View In 3D)

This element specifies the 3-D view of the chart.

#### w (Width)

This element specifies the width (if Width Mode is Factor) or right (if Width Mode is Edge) of the chart element as a fraction of the width of the chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### wireframe (Wireframe)

This element specifies the surface chart is drawn as a wireframe.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Boolean Value) | Specifies a boolean value for the property defined by the parent XML element. |

#### wMode (Width Mode)

This element specifies how to interpret the Width element for this manual layout.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Layout Mode Value) | Specifies the layout mode for the width. |

#### x (Left)

This element specifies the x location (left) of the chart element as a fraction of the width of the chart. If Left Mode is Factor, then the position is relative to the default position for the chart element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### xMode (Left Mode)

This element specifies how to interpret the Left element for this manual layout.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Layout Mode Value) | Specifies the layout mode for the width. |

#### xVal (X Values)

This element specifies the x values which shall be used to define the location of data markers on a chart.

#### y (Top)

This element specifies the top of the chart element as a fraction of the height of the chart. If Top Mode is Factor, then the position is relative to the default position for the chart element.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Floating Point Value) | Specifies that the contents of this attribute contain a floating point number. |

#### yMode (Top Mode)

This element specifies how to interpret the Top element for this manual layout.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Layout Mode Value) | Specifies the layout mode for the width. |

#### yVal (Y Values)

This element specifies the y values which shall be used to define the location of data markers on a chart.

### Simple Types

This is the complete list of simple types dedicated to DrawingML – Charts.

#### ST\_AxisUnit (Axis Unit)

This simple type specifies that its contents contain a positive floating point number.

#### ST\_AxPos (Axis Position)

This simple type specifies the possible positions for an axis.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Bottom) | Specifies that the axis shall be displayed at the bottom of the plot area. |
| l (Left) | Specifies that the axis shall be displayed at the left of the plot area. |
| r (Right) | Specifies that the axis shall be displayed at the right of the plot area. |
| t (Top) | Specifies that the axis shall be displayed at the top of the plot area. |

#### ST\_BarDir (Bar Direction)

This simple type specifies the possible directions for a bar chart.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bar (Bar) | Specifies that the chart is a bar chart - the data markers are horizontal rectangles. |
| col (Column) | Specifies that the chart is a column chart - the data markers are vertical rectangles. |

#### ST\_BarGrouping (Bar Grouping)

This simple type specifies the possible groupings for a bar chart.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| clustered (Clustered) | Specifies that the chart series are drawn next to each other along the category axis. |
| percentStacked (100% Stacked) | Specifies that the chart series are drawn next to each other along the value axis and scaled to total 100%. |
| stacked (Stacked) | Specifies that the chart series are drawn next to each other on the value axis. |
| standard (Standard) | Specifies that the chart series are drawn next to each other on the depth axis. |

#### ST\_BubbleScale (Bubble Scale)

This simple type specifies that its contents contain a percentage between 0% and 300%.

#### ST\_BuiltInUnit (Built-In Unit)

This simple type specifies the built in display units for an axis.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| billions (Billions) | Specifies the values on the chart shall be divided by 1,000,000,000. |
| hundredMillions (Hundred Millions) | Specifies the values on the chart shall be divided by 100,000,000. |
| hundreds (Hundreds) | Specifies the values on the chart shall be divided by 100. |
| hundredThousands (Hundred Thousands) | Specifies the values on the chart shall be divided by 100,000. |
| millions (Millions) | Specifies the values on the chart shall be divided by 1,000,000. |
| tenMillions (Ten Millions) | Specifies the values on the chart shall be divided by 10,000,000. |
| tenThousands (Ten Thousands) | Specifies the values on the chart shall be divided by 10,000. |
| thousands (Thousands) | Specifies the values on the chart shall be divided by 1,000. |
| trillions (Trillions) | Specifies the values on the chart shall be divided by 1,000,000,000,000. |

#### ST\_CrossBetween (Cross Between)

This simple type specifies the possible crossing states of an axis.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| between (Between) | Specifies the value axis shall cross the category axis between data markers. |
| midCat (Midpoint of Category) | Specifies the value axis shall cross the category axis at the midpoint of a category. |

#### ST\_Crosses (Crosses)

This simple type specifies the possible crossing points for an axis.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| autoZero (Axis Crosses at Zero) | The category axis crosses at the zero point of the value axis (if possible), or the minimum value (if the minimum is greater than zero) or the maximum (if the maximum is less than zero). |
| max (Maximum) | The axis crosses at the maximum value |
| min (Minimum) | Axis crosses at the minimum value of the chart. |

#### ST\_DepthPercent (Depth Percent)

This simple type specifies that its contents contain a percentage between 20% and 2000%.

#### ST\_DispBlanksAs (Display Blanks As)

This simple type specifies the possible ways to display blanks.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| gap (Gap) | Specifies that blank values shall be left as a gap. |
| span (Span) | Specifies that blank values shall be spanned with a line. |
| zero (Zero) | Specifies that blank values shall be treated as zero. |

#### ST\_DLblPos (Data Label Position)

This simple type specifies the possible positions for a data label.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Bottom) | Specifies that data labels shall be displayed below the data marker. |
| bestFit (Best Fit) | Specifies that data labels shall be displayed in the best position. |
| ctr (Center) | Specifies that data labels shall be displayed centered on the data marker. |
| inBase (Inside Base) | Specifies that data labels shall be displayed inside the base of the data marker. |
| inEnd (Inside End) | Specifies that data labels shall be displayed inside the end of the data marker. |
| l (Left) | Specifies that data labels shall be displayed to the left of the data marker. |
| outEnd (Outside End) | Specifies that data labels shall be displayed outside the end of the data marker. |
| r (Right) | Specifies that data labels shall be displayed to the right of the data marker. |
| t (Top) | Specifies that data labels shall be displayed above the data marker. |

#### ST\_ErrBarType (Error Bar Type)

This simple type specifies the possible ways to draw an error bar.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| both (Both) | Specifies that error bars shall be shown in the positive and negative directions. |
| minus (Minus) | Specifies that error bars shall be shown in the negative direction only. |
| plus (Plus) | Specifies that error bars shall be shown in the positive direction only. |

#### ST\_ErrDir (Error Bar Direction)

This simple type specifies the possible directions for error bars.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| x (X) | Specifies that error bars shall be shown in the x direction. |
| y (Y) | Specifies that error bars shall be shown in the y direction. |

#### ST\_ErrValType (Error Value Type)

This simple type specifies the possible ways to determine the length of the error bars This simple type's contents are a restriction of the W3C XML Schema string datatype.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| cust (Custom Error Bars) | Specifies that the length of the error bars shall be determined by the Plus and Minus elements. |
| percentage (Percentage) | Specifies that the length of the error bars shall be Error Bar Value percent of the data. |
| stdDev (Standard Deviation) | Specifies that the length of the error bars shall be Error Bar Value standard deviations of the data. |
| stdErr (Standard Error) | Specifies that the length of the error bars shall be Error Bar Value standard errors of the data. |

#### ST\_FirstSliceAng (First Slice Angle)

This simple type specifies that its contents contain an integer between 0 and 360.

#### ST\_GapAmount (Gap Amount)

This simple type specifies that its contents contain a percentage between 0% and 500%.

#### ST\_Grouping (Grouping)

This simple type specifies the possible groupings for a bar chart.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| percentStacked (100% Stacked) | Specifies that the chart series are drawn next to each other along the value axis and scaled to total 100%. |
| stacked (Stacked) | Specifies that the chart series are drawn next to each other on the value axis. |
| standard (Standard) | Specifies that the chart series are drawn on the value axis. |

#### ST\_HoleSize (Hole Size)

This simple type specifies that its contents contain a percentage between 1% and 90%.

#### ST\_HPercent (Height Percent)

This simple type specifies that its contents contain a percentage between 5% and 500%.

#### ST\_LayoutMode (Layout Mode)

This simple type specifies the possible ways to store a chart element's position.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| edge (Edge) | Specifies that the Width or Height shall be interpreted as the Right or Bottom of the chart element. |
| factor (Factor) | Specifies that the Width or Height shall be interpreted as the Width or Height of the chart element. |

#### ST\_LayoutTarget (Layout Target)

This simple type specifies the possible ways to layout the plot area.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| inner (Inner) | Specifies that the plot area size shall determine the size of the plot area, not including the tick marks and axis labels. |
| outer (Outer) | Specifies that the plot area size shall determine the size of the plot area, the tick marks, and the axis labels. |

#### ST\_LblAlgn (Label Alignment)

This simple type specifies the possible ways to align the tick labels.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ctr (Center) | Specifies that the text shall be centered. |
| l (Left) | Specifies that the text shall be left justified. |
| r (Right) | Specifies that the text shall be right justified. |

#### ST\_LblOffset (Label Offset)

This simple type specifies that its contents contain a percentage of the default value, between 0% and 1000%.

#### ST\_LegendPos (Legend Position)

This simple type specifies the possible positions for a legend.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Bottom) | Specifies that the legend shall be drawn at the bottom of the chart. |
| l (Left) | Specifies that the legend shall be drawn at the left of the chart. |
| r (Right) | Specifies that the legend shall be drawn at the right of the chart. |
| t (Top) | Specifies that the legend shall be drawn at the top of the chart. |
| tr (Top Right) | Specifies that the legend shall be drawn at the top right of the chart. |

#### ST\_LogBase (Logarithmic Base)

This simple type specifies that its contents contain a floating point number greater than or equal to two.

#### ST\_MarkerSize (Marker Size)

This simple type specifies that its contents contain an integer between 2 and 72, whose contents are a size in points.

#### ST\_MarkerStyle (Marker Style)

This picture shows each of the marker styles. Black is used as the line color, while red is used as the fill color. The height of the dash and the dot are 1/5th of the height of the marker. The width of the dot is 1/2 the width of the marker. The dash and dot have fills as well, but the markers need to be made quite large before these are visible.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| circle (Circle) | Specifies a circle shall be drawn at each data point. |
| dash (Dash) | Specifies a dash shall be drawn at each data point. |
| diamond (Diamond) | Specifies a diamond shall be drawn at each data point. |
| dot (Dot) | Specifies a dot shall be drawn at each data point. |
| none (None) | Specifies nothing shall be drawn at each data point. |
| picture (Picture) | Specifies a picture shall be drawn at each data point. |
| plus (Plus) | Specifies a plus shall be drawn at each data point. |
| square (Square) | Specifies a square shall be drawn at each data point. |
| star (Star) | Specifies a star shall be drawn at each data point. |
| triangle (Triangle) | Specifies a triangle shall be drawn at each data point. |
| x (X) | Specifies an X shall be drawn at each data point. |

#### ST\_OfPieType (Pie of Pie or Bar of Pie Type)

This simple type specifies the possible modes of Pie of Pie or Bar of Pie charts.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bar (Bar) | Specifies that the chart is a bar of pie chart, not a pie of pie chart. |
| pie (Pie) | Specifies that the chart is pie of pie chart, not a bar of pie chart. |

#### ST\_Order (Order)

This simple type specifies that its contents contain an integer between 2 and 6, whose contents are the order of the trendline polynomial.

#### ST\_Orientation (Orientation)

This simple type specifies the possible ways to place a picture on a data point, series, wall, or floor.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| maxMin (Maximum to Minimum) | Specifies that the values on the axis shall be reversed so they go from maximum to minimum. |
| **Enumeration Value** | **Description** |
| minMax (Minimum to Maximum) | Specifies that the axis values shall be in the usual order, minimum to maximum. |

#### ST\_Overlap (Overlap)

This simple type specifies that its contents contain a percentage between -100% and 100%.

#### ST\_PageSetupOrientation (Printed Page Orientation)

This simple type specifies the page orientation of the printed page(s) on which this chart shall appear.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| default (Default Page Orientation) | Specifies that the page orientation shall be the default orientation of the system. |
| landscape (Landscape Page) | Specifies that the printed page shall have landscape orientation. |
| portrait (Portrait Page) | Specifies that the printed page shall have portrait orientation. |

#### ST\_Period (Period)

This simple type specifies that its contents contain an integer greater than or equal to 2.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| auto (Auto) | Specifies an application-specific marker shall be drawn at each data point. |

#### ST\_Perspective (Perspective)

This simple type specifies that its contents contain an integer between 0 and 100, whose contents are a percentage.

#### ST\_PictureFormat (Picture Format)

This simple type specifies the possible ways to place a picture on a data point, series, wall, or floor.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| stack (Stack) | Specifies that the picture shall be stacked. |
| stackScale (Stack and Scale) | Specifies that the picture shall be stacked after being scaled so that it's height is one Picture Stack Unit. Does not apply to walls or floor. |
| stretch (Stretch) | Specifies that the picture shall be anisotropic stretched to fill the data point, series, wall or floor. |

#### ST\_PictureStackUnit (Picture Stack Unit)

This simple type specifies that its contents contain a floating point number greater than zero.

#### ST\_RadarStyle (Radar Style)

This simple type specifies the possible styles of radar chart.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| filled (Filled) | Specifies that the radar chart shall be filled and have lines but no markers. |
| marker (Marker) | Specifies that the radar chart shall have lines and markers but no fill. |
| standard (Standard) | Specifies that the radar chart shall have lines but no markers and no fill. |

#### ST\_RotX (X Rotation)

This simple type specifies that its contents contain an integer between -90 and 90, whose contents are an angle in degrees.

#### ST\_RotY (Y Rotation)

This simple type specifies that its contents contain an integer between 0 and 360, whose contents are an angle in degrees.

#### ST\_ScatterStyle (Scatter Style)

This simple type specifies the possible styles of scatter chart.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| line (Line) | Specifies the points on the scatter chart shall be connected with straight lines but markers shall not be drawn. |
| lineMarker (Line with Markers) | Specifies the points on the scatter chart shall be connected with straight lines and markers shall be drawn. |
| marker (Marker) | Specifies the points on the scatter chart shall not be connected with lines and markers shall be drawn. |
| none (None) | Specifies the points on the scatter chart shall not be connected with straight lines and markers shall not be drawn. |
| smooth (Smooth) | Specifies the the points on the scatter chart shall be connected with smoothed lines and markers shall not be drawn. |
| smoothMarker (Smooth with Markers) | Specifies the the points on the scatter chart shall be connected with smoothed lines and markers shall be drawn. |

#### ST\_SecondPieSize (Second Pie Size)

This simple type specifies that its contents contain a percentage between 5% and 200%, whose contents consist of a percentage.

#### ST\_Shape (Shape)

This simple type specifies the possible shapes for a 3-D data marker.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| box (Box) | Specifies the chart shall be drawn with a box shape. |
| cone (Cone) | Specifies the chart shall be drawn as a cone, with the base of the cone on the floor and the point of the cone at the top of the data marker. |
| coneToMax (Cone to Max) | Specifies the chart shall be drawn with truncated cones such that the point of the cone would be the maximum data value. |
| cylinder (Cylinder) | Specifies the chart shall be drawn as a cylinder. |
| pyramid (Pyramid) | Specifies the chart shall be drawn as a rectangular pyramid, with the base of the pyramid on the floor and the point of the pyramid at the top of the data marker. |
| pyramidToMax (Pyramid to Maximum) | Specifies the chart shall be drawn with truncated cones such that the point of the cone would be the maximum data value. |

#### ST\_SizeRepresents (Size Represents)

This simple type specifies the possible ways to represent data as bubble chart sizes.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| area (Bubble Size Represents Area) | Specifies the area of the bubbles shall be proportional to the bubble size value. |
| w (Bubble Size Represents Width) | Specifies the radius of the bubbles shall be proportional to the bubble size value. |

#### ST\_Skip (Skip)

This simple type specifies that its contents contain an integer greater than or equal to one.

#### ST\_SplitType (Split Type)

This simple type specifies the possible ways to split a pie of pie or bar of pie chart.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| auto (Default Split) | Specifies the data points shall be split using the default mechanism for this chart type. |
| cust (Custom Split) | Specifies the data points shall be split between the pie and the second chart according to the Custom Split values. |
| percent (Split by Percentage) | Specifies the data points shall be split between the pie and the second chart by putting the points with percentage less than Split Position percent in the second chart. |
| pos (Split by Position) | Specifies the data points shall be split between the pie and the second chart by putting the last Split Position of the data points in the second chart |
| val (Split by Value) | Specifies the data points shall be split between the pie and the second chart by putting the data points with |

#### ST\_Style (Style)

This simple type specifies that its contents contain an integer between 1 and 48. The value determines the default formatting for all chart elements through the tables described below.

#### ST\_TickLblPos (Tick Label Position)

This simple type specifies the possible positions for tick labels.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| high (High) | Specifies the axis labels shall be at the high end of the perpendicular axis. |
| low (Low) | Specifies the axis labels shall be at the low end of the perpendicular axis. |
| nextTo (Next To) | Specifies the axis labels shall be next to the axis. |
| none (None) | Specifies the axis labels are not drawn. |

#### ST\_TickMark (Tick Mark)

This simple type specifies the possible positions for tick marks.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| cross (Cross) | Specifies the tick marks shall cross the axis. |
| in (Inside) | Specifies the tick marks shall be inside the plot area. |
| none (None) | Specifies there shall be no tick marks. |
| out (Outside) | Specifies the tick marks shall be outside the plot area. |

#### ST\_TimeUnit (Time Unit)

This simple type specifies a unit of time.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| days (Days) | Specifies the chart data shall be shown in days. |
| months (Months) | Specifies the chart data shall be shown in months. |
| years (Years) | Specifies the chart data shall be shown in years. |

#### ST\_TrendlineType (Trendline Type)

This simple type specifies all styles of trendline which are available for series in a chart.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| exp (Exponential) | Specifies the trendline shall be an exponential curve in the form y = abx. |
| linear (Linear) | Specifies the trendline shall be a line in the form y = mx + b. |
| log (Logarithmic) | Specifies the trendline shall be a logarithmic curve in the form y = a log x + b, where log is the natural logarithm. |
| movingAvg (Moving Average) | Specifies the trendline shall be a moving average of period Period. |
| poly (Polynomial) | Specifies the trendline shall be a polynomial curve of order Order in the form y = ax6 + bx5+cx4 + dx3 + ex2 + fx + g. |
| power (Power) | Specifies the trendline shall be a power curve in the form y = axb. |

#### ST\_DepthPercentWithSymbol (Depth Percent with Symbol)

This simple type specifies that its contents contain a percentage between 20% and 2000%.

#### ST\_HPercentWithSymbol (Height Percent with Symbol)

This simple type specifies that its contents contain a percentage between 5% and 500%.

#### ST\_GapAmountPercent (Gap Amount Percentage)

This simple type specifies that its contents contain a percentage between 0% and 500%.

##### ST\_SecondPieSizePercent (Second Pie Size Percentage)

This simple type specifies that its contents contain a percentage between 5% and 200%.

##### ST\_HoleSizePercent (Hole Size Percentage)

This simple type specifies that its contents contain a percentage between 1% and 90%.

##### ST\_LblOffsetPercent (Label Offset Percentage)

This simple type specifies that its contents contain a percentage between 0% and 1000%.

##### ST\_OverlapPercent (Overlap Percentage)

This simple type specifies that its contents contain a percentage between -100% and 100%.

##### ST\_BubbleScalePercent (Bubble Scale Percentage)

This simple type specifies that its contents contain a percentage between 0% and 300%.

##### ST\_Thickness (Thickness Percentage)

This simple type specifies that its contents contain a percentage.

##### ST\_ThicknessPercent (Thickness Percentage)

This simple type specifies that its contents contain a percentage.

## DrawingML - Chart Drawings

Within a chart, it is sometimes necessary to include DrawingML elements (shapes or pictures) which should be a child object within the parent chart. This relationship allows those elements to optionally be resized with the chart, automatically moved with the chart, etc.

### Elements

The following element define the contents of the ChartDrawing namespace:

#### absSizeAnchor (Absolute Anchor Shape Size)

This element specifies that the shape described here to reside within a chart should be sized based on relative anchor points. This is achieved via two elements. The from element specifies the top left corner of the shape bounding box in a RTL(right-to-left) implementation. The ext element then specifies the bottom right corner of the shape bounding box in a RTL(right-to-left) implementation and thus the size of the shape.

#### blipFill (Picture Fill)

This element specifies the kind of picture fill that the picture object has. Because a picture has a picture fill already by default, it is possible to have two fills specified for a picture object. An example of this is shown below.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| dpi (DPI Setting) | Specifies the DPI (dots per inch) used to calculate the size of the blip. If not present or zero, the DPI in the blip is used. |
| rotWithShape | Specifies that the fill should rotate with the shape. That is, when the shape that has been filled with a picture and the containing shape (say a rectangle) is transformed with a rotation then the fill is transformed with the same rotation. |

#### cNvCxnSpPr (Non-Visual Connection Shape Drawing Properties)

This element specifies the non-visual drawing properties for a connector shape. These non-visual properties are properties that the generating application would utilize when rendering the parent chart.

#### cNvGraphicFramePr (Non-Visual Graphic Frame Drawing Properties)

This element specifies the non-visual drawing properties for a graphic frame. These non-visual properties are properties that the generating application would utilize when rendering the chart.

#### cNvGrpSpPr (Non-Visual Group Shape Drawing Properties)

This element specifies the non-visual drawing properties for a group shape. These non-visual properties are properties that the generating application would utilize when rendering the chart.

#### cNvPicPr (Non-Visual Picture Drawing Properties)

This element specifies the non-visual properties for the picture canvas. These properties are to be used by the generating application to determine how certain properties are to be changed for the picture object in question.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| preferRelativeResi ze (Relative Resize | Specifies if the user interface should show the resizing of the picture based on the picture's current size or its original size. If this attribute is set to true, then scaling is |
| Preferred) | relative to the original picture size as opposed to the current picture size. |

#### cNvPr (Non-Visual Drawing Properties)

This element specifies non-visual canvas properties. This allows for additional information that does not affect the appearance of the picture to be stored.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| descr (Alternative | Specifies alternative text for the current DrawingML object, for use by assistive technologies or applications which do not display the current object. |
| hidden (Hidden) | Specifies whether this DrawingML object is displayed. When a DrawingML object is displayed within a document, that object can be hidden (i.e., present, but not visible). This attribute determines whether the object is rendered or made hidden. [*Note*: An application can have settings which allow this object to be viewed. *end note*] |
| id (Unique | Specifies a unique identifier for the current DrawingML object within the current document. This ID can be used to assist in uniquely identifying this object so that it can be referred to by other parts of the document. |
| name (Name) | Specifies the name of the object. [*Note*: Typically, this is used to store the original file name of a picture object. *end note*] |
| title (Title) | Specifies the title (caption) of the current DrawingML object. |

#### cNvSpPr (Non-Visual Shape Drawing Properties)

This element specifies the non-visual drawing properties for a shape. These properties are to be used by the generating application to determine how the shape should be dealt with.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| txBox (Text Box) | Specifies that the corresponding shape is a text box and thus should be treated as such by the generating application. If this attribute is omitted then it is assumed that the corresponding shape is not specifically a text box. | |
| **Attributes** | | **Description** |
| http://purl.oclc.or g/ooxml/drawing ml/main | |  |

#### cxnSp (Connection Shape)

This element specifies a connection shape that is used to connect two sp elements. Once a connection is specified using a cxnSp, it is left to the generating application to determine the exact path the connector takes. That is the connector routing algorithm is left up to the generating application as the desired path might be different depending on the specific needs of the application.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fPublished (Publish to Server) | Specifies whether the shape shall be published with the worksheet when sent to the spreadsheet server. This is for use when interfacing with a document server. |
| macro (Reference to Custom Function) | This element specifies the custom function associated with the chart. [*Example*: A macro script, add-in function, and so on. *end example*] |

#### ext (Shape Extent)

This element describes the length and width properties for how far a drawing element should extend for.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| cx (Extent Length) | Specifies the length of the extents rectangle in EMUs. This rectangle shall dictate the size of the object as displayed (the result of any scaling to the original object). |
| cy (Extent Width) | Specifies the width of the extents rectangle in EMUs. This rectangle shall dictate the size of the object as displayed (the result of any scaling to the original object). |

#### from (Starting Anchor Point)

This element specifies the first anchor point for the drawing element. This is used to anchor the top and left sides of the shape within the chart. That is when the corresponding chart is adjusted, the shape is also adjusted. [*Example*: Consider the following Chart Drawing content:

#### graphicFrame (Graphic Frame)

This element specifies the existence of a graphics frame. This frame contains a graphic that was generated by an external source and needs a container in which to be displayed on the slide surface.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fPublished (Publish To Server) | Specifies whether the shape shall be published with the worksheet when sent to the spreadsheet server. This is for use when interfacing with a document server. |
| macro (Reference to Custom Function) | This element specifies the custom function associated with the chart. [*Example*: A macro script, add-in function, and so on. *end example*] |

#### grpSp (Group Shape)

This element specifies a group shape that represents many shapes grouped together. This shape is to be treated just as if it were a regular shape but instead of being described by a single geometry it is made up of all the shape geometries encompassed within it. Within a group shape each of the shapes that make up the group are specified just as they normally would. The idea behind grouping elements however is that a single transform can apply to many shapes at the same time.

#### grpSpPr (Group Shape Properties)

This element specifies the properties that are to be common across all of the shapes within the corresponding group. If there are any conflicting properties within the group shape properties and the individual shape properties then the individual shape properties should take precedence.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and | Specifies that the group shape should be rendered using only black and white coloring. That is the coloring information for the group shape should be converted to either black or white when rendering the corresponding shapes. |

#### nvCxnSpPr (Connector Non Visual Properties)

This element specifies all non-visual properties for a connection shape. This element is a container for the nonvisual identification properties, shape properties and application properties that are to be associated with a connection shape. This allows for additional information that does not affect the appearance of the connection shape to be stored.

#### nvGraphicFramePr (Non-Visual Graphic Frame Properties)

This element specifies all non-visual properties for a graphic frame. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a graphic frame. This allows for additional information that does not affect the appearance of the graphic frame to be stored.

#### nvGrpSpPr (Non-Visual Group Shape Properties)

This element specifies all non-visual properties for a group shape. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a group shape. This allows for additional information that does not affect the appearance of the group shape to be stored.

#### nvPicPr (Non-Visual Picture Properties)

This element specifies the non visual properties for a picture. This allows for additional information that does not affect the appearance of the picture to be stored.

#### nvSpPr (Non-Visual Shape Properties)

This element specifies all non-visual properties for a shape. This element is a container for the non-visual identification properties, shape properties and application properties that are to be associated with a shape. This allows for additional information that does not affect the appearance of the shape to be stored.

#### pic (Picture)

This element specifies the existence of a picture object within the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fPublished (Publish to Server) | Specifies whether the shape shall be published with the worksheet when sent to the spreadsheet server. This is for use when interfacing with a document server. |
| macro (Reference to Custom Function) | This element specifies the custom function associated with the chart. [*Example*: A macro script, add-in function, and so on. *end example*] |

#### relSizeAnchor (Relative Anchor Shape Size)

This element specifies that the shape described here to reside within a chart should be sized based on relative anchor points. This is achieved via two elements. The from element specifies the top left corner of the shape bounding box in a RTL(right-to-left) implementation. The to element then specifies the bottom right corner of the shape bounding box in a RTL(right-to-left) implementation and thus the size of the shape.

#### sp (Shape)

This element specifies the existence of a single shape. A shape can either be a preset or a custom geometry, defined using the DrawingML framework. In addition to geometry, each shape can have both visual and nonvisual properties attached. Text and corresponding styling information can also be attached to a shape. This shape is specified along with all other shapes within either the shape tree or group shape elements.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| fLocksText (Lock Text) | Specifies whether to allow for the editing of text within this shape when the worksheet on which the shape resides has been protected as defined by SpreadsheetML. This allows for the specifying of locked or "protected" text on a per-shape basis within a spreadsheet document. If this attribute is not specified then a value of 0, or false is assumed. | |
| fPublished (Publish to Server) | Specifies whether the shape shall be published with the worksheet when sent to the spreadsheet server. This is for use when interfacing with a document server. |
| macro (Reference to Custom Function) | This element specifies the custom function associated with the chart. [*Example*: A macro script, add-in function, and so on. *end example*] |
| textlink (Text Link) | Specifies whether the text contained within this shape is linked to a cell within the spreadsheet. That is the text within the shape has the value defined in the referenced spreadsheet cell. |

#### spPr (Shape Properties)

This element specifies the visual shape properties that can be applied to a special shape such as a connector shape or picture. These are the same properties that are allowed to describe the visual properties of a shape but are used here to describe additional object-specific properties within a document. This allows for these shapes to have both the properties of a shape as well as specific properties that are unique to only them.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and | Specifies that the picture should be rendered using only black and white coloring. That is the coloring information for the picture should be converted to either black or white when rendering the picture. |

#### style (Shape Style)

The element specifies the style that is applied to a shape and the corresponding references for each of the style components such as lines and fills.

#### to (Ending Anchor Point)

This element specifies the second anchor point for the drawing element. This is used to anchor the bottom and right sides of the shape within the spreadsheet. That is when the corresponding chart is adjusted, the shape is also adjusted.

#### txBody (Shape Text Body)

This element specifies the existence of text to be contained within the corresponding shape. All visible text and visible text related properties are contained within this element. There can be multiple paragraphs and within paragraphs multiple runs of text.

#### x (Relative X Coordinate)

This element specifies the relative x coordinate that is used to define the percentage-based horizontal position for a shape within a chart drawing object. The coordinate boundaries are specified within the corresponding simple type listed below.

#### xfrm (Graphic Frame Transform)

This element specifies a 2-D transform to be applied to a Graphic Frame.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| flipH (Horizontal | Specifies a horizontal flip. When true, this attribute defines that the shape is flipped horizontally about the center of its bounding box. |
| flipV (Vertical Flip) | Specifies a vertical flip. When true, this attribute defines that the group is flipped vertically about the center of its bounding box. |
| rot (Rotation) | Specifies the rotation of the Graphic Frame. The units for which this attribute is specified in reside within the simple type definition referenced below. |

#### y (Relative Y Coordinate)

This element specifies the relative y coordinate that is used to define the percentage-based vertical position for a shape within a chart drawing object. The coordinate boundaries are specified within the corresponding simple type listed below.

### Simple Types

This is the complete list of simple types dedicated to DrawingML – Chart Drawings.

#### ST\_MarkerCoordinate (Chart Marker Coordinate Value)

This simple type specifies the chart marker coordinate value. It is to be represented as a fractional position between 0.0 and 1.0 of the chart width or height with 0.0 being the left or top edge.

## DrawingML - Diagrams

A DrawingML diagram allows the definition of diagrams using DrawingML objects and constructs. This namespace defines the contents of a DrawingML diagram.

### Diagram Definition

This section specifies the elements which define the layout and hierarchy of a diagram based on its constituent nodes and connections.

#### adj (Shape Adjust)

Shape adjust value. These can be used to modify the adjust handles supported on various auto shapes. It is only possible to set the initial value, not to modify it using constraints and rules.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| idx (Adjust Handle Index) | Adjust value index. Different shapes support different adjust handles. |
| val (Value) | An absolute value. |

#### adjLst (Shape Adjust List)

This element is simply a list of shape adjusts.

#### alg (Algorithm)

The algorithm used by the containing layout node. The algorithm defines the behavior of the layout node along with the behavior and layout of the nested layout nodes.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| rev (Revision Number) | The revision number of an algorithm. |
| type (Algorithm Type) | Specifies the algorithm type. |

#### cat (Category)

This element specifies a category in the user interface where this layout definition displays to the user.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| pri (Priority) | The priority within the category for this diagram determines the order in which it displays in the user interface. Lower numbers are displayed at the beginning of the list. |
| type (Category Type) | Specifies the category type associated with the element. |

#### catLst (Category List)

This element is simply a list of cat elements.

#### choose (Choose Element)

The choose element wraps if/else blocks into a choose block.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | A unique name associated with the choose statement. |

#### clrData (Color Transform Sample Data)

This element defines the sample data that is to be used in the user interface controls regarding displaying color transforms for a given diagram. This sample data predefines a data model to be combined with a layout definition in order to create a diagram which a color transform can be applied and displayed to the user as an example of the color transform.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| useDef (Use Default) | If the value of this attribute is true, the data model defined in the clrData element is ignored and a default data model is used instead. |

#### constr (Constraint)

This element is used to specify size, position of nodes, text values, and layout dependencies between nodes in a layout definition.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fact (Factor) | Factor used in a reference constraint or a rule in order to modify a referenced value by the factor defined. |
| for (For) | Specifies the axis of layout nodes to apply a constraint or rule to. |
| forName (For Name) | Specifies the name of the layout node to apply a constraint or rule to. |
| op (Operator) | The operator constraint used to evaluate the condition. |
| ptType (Data Point Type) | Specifies the type of data point to select. |
| refFor (Reference For) | The for value of the referenced constraint. |
| refForName | The name of the layout node referenced by a reference constraint. |
| refPtType (Reference Point | The point type used int he referenced constraint. |
| refType (Reference Type) | Specifies the type of a reference constraint. |
| type (Constraint Type) | Specifies the constraint to apply to this layout node. |
| val (Value) | Specifies an absolute value instead of reference another constraint. |

#### constrLst (Constraint List)

This element is simply a list of constraints.

#### dataModel (Data Model)

The data for this instance of the diagram. Either a sample data model, or the data the user has entered.

#### desc (Description)

This element holds a description for a layout definition. The description can be used to describe the qualities associated with a particular layout definition.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lang (Language) | The natural language of the title or description of this layout definition. |
| val (Value) | The string which is used as the description of the layout definition. |

#### else (Else)

This element is similar to an else statement in a programming language in that it wraps elements which are to be used when the if conditionals are not true.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | A unique name associated with the choose statement. |

#### extLst (Extension List)

This element specifies an extension list, within which all future extensions are defined within ext elements.

#### forEach (For Each)

A looping structure, similar to a for loop in a programming language, which defines what data model points use this layout node.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| axis (Axis) | Specifies the axis on which to select data from the data model. | |
| cnt (Count) | Specifies the count of items to use in a data set. |
| hideLastTrans | In algorithms that support transitions, this attribute specifies that the last transition is not rendered. This allows for diagrams that start and end with a node. |
| name (Name) | A unique identifier for the layout node. |
| ptType (Data Point Type) | Specifies the type of data point to select. |
| ref (Reference) | When used on a for-each element, causes the specified for-each element to be used instead. |
| st (Start) | Specifies where to start in a data set. |
| step (Step) | Specifies the step to use in a data set. A step with a value of 2 returns every other item in the set. |

#### if (If)

Like an if statement in a programming language, wraps elements which are to be used under the conditions defined by its attributes.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| arg (Argument) | Specifies the variable to use as part of the test in an if element. Ignored unless the function attribute is set to "var". | |
| axis (Axis) | Specifies the axis on which to select data from the data model. | |
| cnt (Count) | Specifies the count of items to use in a data set. | |
| func (Function) | The function used to evaluate the if condition. | |
| name (Name) | A unique identifier for the layout node. |
| op (Operator) | The operator used to evaluate the condition. |
| ptType (Data Point Type) | Specifies the type of data point to select. |
| st (Start) | Specifies where to start in a data set. |
| step (Step) | Specifies the step to use in a data set. A step with a value of 2 returns every other item in the set. |
| val (Value) | An absolute value. |

#### layoutDef (Layout Definition)

This element is the root element for defining a layout definition. The layout definition is defined through a set of nested layout nodes. The layout definition is responsible for defining the look of a diagram.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| defStyle (Default Style) | This attribute defines a reference to a default style which is to be applied to the diagram. |
| minVer (Minimum Version) | Minimum product version that can support this layout definition. |
| uniqueId (Unique | The unique identifier for this layout definition. |

#### layoutDefHdr (Layout Definition Header)

This element is the header information representing the minimum knowledge needed by an application to preload information about a layout definition. This preloading allows for the actual load of the layout definition to occur at a later time which helps with any performance concerns an application might have.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| defStyle (Default Style) | This attribute defines a reference to a default style which is to be applied to the diagram. |
| minVer (Minimum Version) | Minimum product version that can support this Diagram Layout. |
| resId (Resource Identifier) | Resource ID used internally. |
| uniqueId (Unique | The unique identifier for this layout definition. |

#### layoutDefHdrLst (Diagram Layout Header List)

This element is simply a list of layout definition headers. This list of headers is used internally as a way to group all of the layout definition headers together into a single structure.

#### layoutNode (Layout Node)

The layout node is the basic building block of diagrams. The layout node is responsible for defining how shapes are arranged in a diagram and how the data maps to a particular shape in a diagram.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| chOrder (Child Order) | Specifes the ordering of the child layout nodes for a given layout node. |
| moveWith (Move With) | Reference to another layout node that this layout node moves with. |
| name (Name) | A unique identifier for the layout node. |
| styleLbl (Style Label) | Specify which formatting option from a style or color variation should be applied to this layout node. |

#### param (Parameter)

The parameter element modifies the default behavior of an algorithm.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| type (Parameter Type) | Specifies the parameter which is being modified. |
| val (Value) | Specifies the actual value to be given to the parameter type defined by the type attribute. |

#### presOf (Presentation Of)

This element specifies a particular data model point which is to be mapped to the containing layout node. This attribute is responsible for defining the mapping of data to the layout nodes in a diagram.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| axis (Axis) | Specifies the axis on which to select data from the data model. |
| cnt (Count) | Specifies the count of items to use in a data set. |
| hideLastTrans | In algorithms that support transitions, this attribute specifies that the last transition is not rendered. This allows for diagrams that start and end with a node. |
| ptType (Data Point Type) | Specifies the type of data point to select. |
| st (Start) | Specifies where to start in a data set. |
| step (Step) | Specifies the step to use in a data set. A step with a value of 2 returns every other item in the set. |

#### relIds (Explicit Relationships to Diagram Parts)

This element specifies the relationship IDs used to explicitly reference each of the four constituent parts of a DrawingML diagram:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| cs (Explicit | Specifies the relationship ID for the explicit relationship to the Diagram Colors part used by this diagram. |
| dm (Explicit Relationship to | Specifies the relationship ID for the explicit relationship to the Diagram Data part used by this diagram. |
| Namespace: | http://schemas.openxmlformats.org/officeDocument/2006/relationships/diagramD ata or the document shall be considered non-conformant. |
| lo (Explicit | Specifies the relationship ID for the explicit relationship to the Diagram Layout Definition part used by this diagram. |
| qs (Explicit | Specifies the relationship ID for the explicit relationship to the Diagram Style part used by this diagram. |

#### resizeHandles (Shape Resize Style)

This element defines the behavior when resizing shapes within a diagram. Because the size of the shape plays a large role in the overall layout of other nodes within the diagram, there are two ways resize can occur on a node.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Shape Resize Style Type) | Specifies the behavior for a shape when resizing shapes within a diagram. |

#### rule (Rule)

This element allows for a rule to be specified which changes the value of an existing constraint.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fact (Factor) | Factor used in a reference constraint or a rule in order to modify a referenced value by the factor defined. |
| for (For) | Specifies the axis of layout nodes to apply a constraint or rule to. |
| forName (For Name) | Specifies the name of the layout node to apply a constraint or rule to. |
| max (Max Value) | Sets the maximum value for a constraint so rules can no longer increase the constraint beyond that value. |
| ptType (Data Point Type) | Specifies the type of data point to select. |
| type (Constraint Type) | Specifies the constraint to apply to this layout node. |
| val (Value) | Specifies an absolute value instead of reference another constraint. |

#### ruleLst (Rule List)

This element is simply a list of rules.

#### sampData (Sample Data)

This element defines the sample data model which is used to pre-populate a diagram with placeholder data in order for the diagram to display itself in the user interface which shows all of the available diagrams to a user.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| useDef (Use Default) | If the value of this attribute is true, the data model defined in the clrData element is ignored and a default data model is used instead. |

#### shape (Shape)

The shape displayed by the containing layout node. Not all layout nodes display shapes.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| blip (Relationship to | Specifies the relationship ID of the explicit relationship to an image which shall be used as the image for the contents of this shape. |
| blipPhldr (Image Placeholder) | Specifies whether to use an image placeholder or not. |
| hideGeom (Hide Geometry) | When set to "true", hides the geometry of the shape. The text is still visible. |
| lkTxEntry (Prevent Text Editing) | Prevents text editing on this shape. |
| rot (Rotation) | Rotates the shape by the specified number of degrees. |
| type (Shape Type) | Specifies the type of shape. |
| zOrderOff (Z-Order Offset) | Offsets the shape from its default z-order stacking, which is based on the order the layout nodes appear in the XML. |

#### style (Shape Style)

This element specifies the style information for a shape, as defined by its DrawingML child elements.

#### styleData (Style Data)

This element defines the style data model which is used to pre-populate a diagram with placeholder data in order for the diagram to display itself in the user interface which shows a quick style applied to the diagram.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| useDef (Use Default) | If the value of this attribute is true, the data model defined in the clrData element is ignored and a default data model is used instead. |

#### title (Title)

Title of the Diagram Layout.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lang (Language) | Specifies the language of the title or description of this layout definition. |
| val (Value) | Specifies the title or description of this layout definition. |

#### varLst (Variable List)

This element consists of a list of variables which interact with user interface components.

### Data

This section specifies the data that is to be contained within a diagram.

#### bg (Background Formatting)

This element defines formatting that can be applied to the background shape of the entire diagram. The background shape can hold formatting options just as a normal shape can hold within DrawingML.

#### cxn (Connection)

This element defines a connection between two points. A connection defines a relationship between two points in a diagram.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| destId (Destination Identifier) | The model identifier of the destination point for a connection. |
| destOrd (Destination | The relative position of the destination point among it's siblings. |
| modelId (Model | The unique identifier associated with this cxn. |
| parTransId (Parent Transition | The model identifier of the point representing the parent transition. [*Example*: One example of a parent transition can be thought of as the shape connecting two points, |
| presId (Presentation | The unique identifier of the layout associated to the cxn (only the active presentation (layout) is saved so all the presId's in the file should be the same). |
| sibTransId (Sibling | The model identifier of the point representing the sibling transition. [*Example*: An example of a sibling transition can be thought of as the shape connecting two points, such as an arrow in the diagram. *end example*] |
| srcId (Source Identifier) | The model identifier of the source point for a connection. |
| srcOrd (Source Position) | The relative position of the source point among it's siblings. |
| type (Point Type) | The type of point, which corresponds to a connection in this case. |

#### cxnLst (Connection List)

This element defines a group of connections. There can be a connection list defined for any data model which holds all of the connections between points defined in the diagram.

#### prSet (Property Set)

This element holds properties and customizations which are used throughout certain elements in DiagramML. The properties can be grouped into the following general categories:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attributes** | | **Description** | | | |
| coherent3DOff | | Enables or disables the Coherent 3D behavior for styles that specify this property. | | | |
| csCatId (Color | | This attribute specifies the identifier of the current color transform category. | | | |
| csTypeId (Color | | This attribute specifies the identifier of the currently applied color transform. | | | |
| custFlipHor (Custom Horizontal | | | Specifies if there is a custom horizontal flip applied. | | |
| custFlipVert (Custom Vertical | | | Specifies if there is a custom vertical flip applied. | | |
| custLinFactNeighb orX (Neighbor Offset Width) | | | Specifies the percentage of the neighbor's width used for offsetting shape. | | |
| custLinFactNeighb orY (Neighbor Offset Height) | | | Specifies the percentage of the neighbor's height used for offsetting shape. | | |
| custLinFactX (Custom Factor | | | Specifies the percentage of the current shape width used for offsetting the shape. | | |
| custLinFactY (Custom Factor | | | Specifies the percentage of the current shape height used for offsetting the shape. | | |
| custRadScaleInc | | | Specifies the amount that the include angle has been scaled by. | | |
| custRadScaleRad (Radius Scale) | | | Specifies how much the radius has been scaled. | | |
| custScaleX (Width Scale) | | | Specifies the amount that the width has been scaled by. | | |
| custScaleY (Height Scale) | | | Specifies the amount that the height has been scaled by. | | |
| custSzX (Fixed Width Override) | | Specifies a fixed width override for a shape. | |
| custSzY (Fixed Height Override) | | Specifies a fixed height override for a shape. | |
| custT (Text Changed) | | Specifies if the text has been customized which allows layout to ignore automatic formatting options available to the text. | |
| loCatId (Current Diagram Category) | | Specifies the current identifier of the layout category applied to the diagram. | |
| loTypeId (Current Diagram Type) | | Specifies the identifier for the layout currently applied to the diagram. | |
| phldr (Placeholder) | | Indicates that the point is a placeholder or sample item. | |
| phldrT (Placeholder Text) | | The text used for display in the element if the placeholder flag is set to true. If this property is not set then the default placeholder text is used. | |
| presAssocID | | The point associated with this presentation element. This identifier is used together with presName to create a unique key for presentation element indexing. | |
| presName | | The layout node name of this presentation element. This name is used together with presAssocID to create a unique key for presentation element indexing. | |
| presStyleCnt (Presentation Style | | Specifies the layout node style count of this presentation element. | |
| presStyleIdx (Presentation Style | | Specifies the layout node style index of this presentation element. | | | | |
| presStyleLbl (Presentation Style | Specifies the layout node style label of this presentation element. | | | |
| qsCatId (Current Style Category) | Specifies the identifier of the category of the currently applied quick style. | | | |
| qsTypeId (Current Style Type) | Specifies the identifier of the currently applied quick style. | | | |

#### pt (Point)

This element defines a point in DiagramML. A point in DiagramML is defined to hold data associated with a particular point or node in a diagram. Transitions between nodes in a diagram along with the nodes themselves are defined as different types of points. A point is not only responsible for holding the data associated with a node in a diagram, but also for holding customization properties made to the text and shape associated with the particular node.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| cxnId (Connection Identifier) | The model identifier of the connection that represents the transition node. |
| modelId (Model | The unique identifier of the element within the data model. This identifier should be unique only relative to the containing data model. |
| type (Point Type) | The type of point. |

#### ptLst (Point List)

This element simply holds a list of points within the data model.

#### spPr (Shape Properties)

This element specifies the properties for a single shape in a diagram's data, as defined using DrawingML child elements.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| bwMode (Black and | Specifies that the picture should be rendered using only black and white coloring. That is the coloring information for the picture should be converted to either black or white when rendering the picture. |

#### t (Text Body)

Text body containing the default body, paragraph and character properties. There should be a signle paragraph and no text runs. Any runs in the first paragraph and paragraphs in addition to the first are ignored.

#### whole (Whole E2O Formatting)

Formatting that applies to the entire diagram object, and not just the background, includes line and effect properties.

### Color Information

This section defines the coloring information that is to be associated with a diagram.

#### cat (Color Transform Category)

This element specifies the category in the user interface that a color transform is to be displayed within.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| pri (Priority) | The priority within the category for this color variation determines the order in which it displays in the user interface. The lower numbers are to be displayed at the beginning of the list. |
| type (Category Type) | The category type used to organize the color transforms in the user interface. |

#### catLst (Color Transform Category List)

This element defines a list of color transform categories. This list can be used to populate user interface components which could separate color transforms into categories.

#### colorsDef (Color Transform Definitions)

This element is the root element for color transforms. Held within this element are all of the available color transforms themselves along with other elements and attributes associated with defining the general color transform properties and attributes.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| minVer (Minimum  Version) | The minimum product version that can support this color transform. |
| uniqueId (Unique | A unique id associated with the color transform definition. |

#### colorsDefHdr (Color Transform Definition Header)

This element specifies header information associated with a color transform definition. The header information is used by an application to preprocess required data in order to help with possible performance concerns associated with an initial full load of a color transform definition.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| minVer (Minimum Version) | The minimum product version that can support the associated color transform definition. |
| resId (Resource ID) | This attribute is the id which associates this header to the actual color transform definition. |
| uniqueId (Unique | This attribute defines a unique identifier for the associated color transform definition. |

#### colorsDefHdrLst (Color Transform Header List)

This element is simply a list of color transform definition headers and is used to consolidate multiple headers in a group.

#### desc (Description)

This element holds a description for a color definition. The description can be used to describe the qualities associated with a particular color transform definition.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lang (Language) | The natural language of the color transform definition. |
| val (Description Value) | The string which is used as the description of the color transform definition. |

#### effectClrLst (Effect Color List)

This element defines a list of colors applied to effects within a color transform.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| hueDir (Hue Direction) | The direction around the color wheel the hue shift (if defined) occurs. |
| meth (Color Application Method | The method used to apply the color transform. |

#### fillClrLst (Fill Color List)

This element defines a list of colors which are used as fill colors in the color transform. The fill colors define the color of the nodes in a diagram.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| hueDir (Hue Direction) | The direction around the color wheel the hue shift (if defined) occurs. |
| meth (Color Application Method | The method used to apply the color transform. |

#### linClrLst (Line Color List)

This element defines a list of colors which are used as line colors in the color transform. The line colors define the color of the lines used on a given node in a diagram

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| hueDir (Hue Direction) | The direction around the color wheel the hue shift (if defined) occurs. |
| meth (Color Application Method | The method used to apply the color transform. |

#### styleLbl (Style Label)

This element defines a style label. The style label is used to define a color transform that is applied to a given node in a diagram.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Name) | A name given to the style label. This name can be referenced by layout nodes in order to apply the style label to the layout node. |

#### title (Title)

The name or title given to the color definition header.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lang (Language) | The natural language of the title or description of a color transform definition. |
| val (Description Value) | A string used for a description of a color transform definition. |

#### txEffectClrLst (Text Effect Color List)

This element defines a list of colors which are used as text effect colors in the color transform. The text effect colors define the color of the text effects used on a given node in a diagram

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| hueDir (Hue Direction) | The direction around the color wheel the hue shift (if defined) occurs. |
| meth (Color Application Method | The method used to apply the color transform. |

#### txFillClrLst (Text Fill Color List)

This element defines a list of colors which are used as text colors in the color transform. The text colors define the color of the text used in a given node in a diagram

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| hueDir (Hue Direction) | The direction around the color wheel the hue shift (if defined) occurs. |
| meth (Color Application Method | The method used to apply the color transform. |

#### txLinClrLst (Text Line Color List)

This element defines a list of colors which are used as text line colors in the color transform. The text line colors define the color of the line on text used in a given node in a diagram

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| hueDir (Hue Direction) | The direction around the color wheel the hue shift (if defined) occurs. |
| meth (Color Application Method | The method used to apply the color transform. |

### Style Definitions

This section describes the styling information to be associated with a diagram.

#### cat (Category)

The category in the user interface where this quick style displays in the user interface.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| pri (Priority) | The priority within the category for this style determines the order in which it displays in the user interface. Lower numbers are displayed at the beginning of the list. |
| type (Category Type) | Category type. This is used to organize the quick style in the user interface. |

#### catLst (Category List)

This element is simply a list of categories.

#### desc (Style Label Description)

This element defines a description for a style label definition. The description is simply a string describing the characteristics of the style label definition.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lang (Natural Language) | The natural language of the title or description of this quick style. |
| val (Description Value) | The string used for the description. |

#### presLayoutVars (Presentation Layout Variables)

This element specified the layout property set. This set of properties determine different aspects concerning the layout of a diagram. All of the elements associated with enabling or disabling aspects of the user interface are also defined here.

#### scene3d (3-D Scene)

The 3-D scene which consists of a camera, a light rig, and an optional backdrop to catch shadows.

#### sp3d (3-D Shape Properties)

A set of 3-D properties which a shape can contain.

|  |  |  |
| --- | --- | --- |
| **Attributes** | **Description** | |
| contourW (Contour | Defines the width of the contour on the shape. | |
| extrusionH | | Defines the height of the extrusion applied to the shape. |
| prstMaterial (Preset Material | | Defines the preset material which is combined with the lighting properties to give the final look and feel of a shape. |
| z (Shape Depth) | | Defines the z coordinate for the 3D shape. |

#### styleDef (Style Definition)

This element is the root tag for a style definition.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| minVer (Minimum Version) | The minimum product version that can support this quick style. |
| uniqueId (Unique Style ID) | Unique ID that identifies a style. |

#### styleDefHdr (Style Definition Header)

This element specifies header information associated with a style definition. The header information is used by an application to preprocess required data in order to help with possible performance concerns associated with an initial full load of a color transform definition.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| minVer (Minimum Version) | The minimum product version that can support this quick style. |
| resId (Resource ID) | This attribute is the id which associates this header to the actual style definition part. |
| uniqueId (Unique Style ID) | This attribute defines a unique identifier for the associated style definition. |

#### styleDefHdrLst (List of Style Definition Headers)

This element is simply a list of style definition headers and is used to consolidate multiple headers into one group.

#### styleLbl (Style Label)

This element defines the actual style which is applied to a node in a diagram The style is referenced from within layout node. The style label contains formatting (without defining color) such as the 3D properties and text properties associated with a shape.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name (Style Name) | The name of the style. This apears as the tooltip in the user interface. |

#### title (Title)

This element defines the title given to a style definition header. The title is simply a name for the style definition.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| lang (Natural Language) | The natural language of the title or description of this quick style. |
| val (Description Value) | The string used for the description. |

#### txPr (Text Properties)

This element defines special text formatting that can be applied to text through a style label.

### Layout Definition

This section specifies the node layout information to be associated with a diagram.

#### animLvl (Level Animation)

This variable is used to indicate the animate by level string which is displayed to a user in the user interface.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Level | This attribute indicates the string to use for level animation in the user interface. |

#### animOne (One by One Animation String)

This variable is used to indicate the string to use for one-by-one animation in the user interface. This is used primarily when defining hierarchical diagrams to specify different ways animations applies to different levels of the diagram.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (One By One Animation Value) | Specifies the type of one-by-one animation to use for a diagram. |

#### bulletEnabled (Show Insert Node)

This element is used to indicate whether to enable user interface components associated with inserting a node in the data model.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Show Insert Node Value) | This attribute is used to indicatewhether a user interface for inserting a node should be enabled. A value of true indicates that the user interface should be enabled. |

#### chMax (Maximum Children)

This element is used to indicate when to enable and disable the user interface components associated with adding a new shape to a diagram. This element defines a max number of nodes a diagram can support through the user interface directly.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Maximum | This attribute indicates the maximum number of children the node can have before the user interface should be disabled. A value of -1 indicates an infinite number of children. Default value is -1. |

#### chPref (Preferred Number of Children)

This variable indicates the number of children that the current node prefers to have. [*Note*: For example, this could be used to guide how many shapes to add by default to a diagram at various levels in the hierarchy. *end note*]

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Preferred Number of CHildren | This attribute indicates the number of children that the current node prefers to have. A value of -1 indicates an infinite number of children. Default value is -1. |

#### dir (Diagram Direction)

This element indicates whether the diagram should switch direction. This element provides the ability to define different behavior for diagrams considering LTR or RTL directions.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Diagram Direction Value) | This variable indicates whether the diagram should switch direction. |

#### hierBranch (Organization Chart Branch Style)

This element defines the layout style of a branch in an organizational chart.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Organization Chart Branch Style | The value of this attribute indicates the layout style of a branch in an organization chart. The default value is std. |

#### orgChart (Show Organization Chart User Interface)

This element is used to indicate when to show user interface controls specifically associated with organizational charts such as being able to add an assistant to a selected node.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Show | This attribute value specifies when to show the ‘Insert Assistant’ user interface control and the ‘Change Layout’ user interface for this diagram. |

### Simple Types

This is the complete list of simple types dedicated to DrawingML – Diagrams.

#### ST\_AlgorithmType (Algorithm Types)

Types of available algorithms.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| composite (Composite) | The composite algorithm specifies the size and position for all child layout nodes. You can use it to |
| conn (Connector Algorithm) | The connector algorithm lays out and routes connecting lines, arrows, and shapes between layout nodes. |
| cycle (Cycle Algorithm) | The cycle algorithm lays out child layout nodes around a circle or portion of a circle using equal angle spacing. |
| hierChild (Hierarchy Child Algorithm) | The hierarchy child algorithm works with the hierRoot algorithm to create hierarchical tree layouts. This algorithm aligns and positions its child layout nodes in a linear path under the hierRoot layout node. |
| hierRoot (Hierarchy Root Algorithm) | The hierarchy root algorithm works with the hierChild algorithm to create hierarchical tree layouts. The hierRoot algorithm aligns and positions the hierRoot layout node in relation to the hierChild layout nodes. |
| lin (Linear Algorithm) | The linear algorithm lays out child layout nodes along a linear path. |
| pyra (Pyramid Algorithm) | The pyramid algorithm lays out child layout nodes along a vertical path and works with the trapezoid shape to create a pyramid. |
| snake (Snake Algorithm) | The snake algorithm lays out child layout nodes along a linear path in two dimensions, allowing the linear flow to continue across multiple rows or columns. |
| sp (Space Algorithm) | The space algorithm is used to specify a minimum space between other layout nodes or as an indication to do nothing with the layout node’s size and position. |
| tx (Text Algorithm) | The text algorithm sizes text to fit inside a shape and controls its margins and alignment. |

#### ST\_AnimLvlStr (Animation Level String Definition)

This simple type specifies the possible values for the string that should be displayed by a consumer for level animation of this diagram.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ctr (From Center Animation) | This value specifies that the consumer shall allow "From Center At Once" or "From Center One by One" animation styles for this diagram. |
| lvl (By Level Animation) | This value specifies that the consumer shall display "By Level" animation types for this diagram. |
| none (Disable Level At Once) | This value specifies that the consumer shall disable level at once animation. |

#### ST\_AnimOneStr (One by One Animation Value Definition)

This simple type defines the possible values for the string to use for one by one animation in the UI. Default value is one.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| branch (By Branch One By One) | This value specifies that the one by one animation string in the user interface should read "By Branch One By One". |
| none (Disable One-by-One) | This value specifies that the consumer should disable one by one animation. |
| one (One By One) | This value specifies that the one by one animation string in the user interface should read "One By One". |

#### ST\_ArrowheadStyle (Arrowhead Styles)

This simple type defines different arrowhead style types for connectors.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| arr (Arrowhead Present) | Specifies that an arrowhead is to be used on the connector. |
| auto (Auto) | Specifies that the algorithm defines if an arrowhead is to be used on a connector. |
| noArr (No Arrowhead) | Specifies no arrowhead is to be used on the connector. |

#### ST\_AutoTextRotation (Auto Text Rotation)

This simple type defines how text rotates within a shape when the shape is rotated by an algorithm during layout.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| grav (Gravity) | Specifies that when the angle of the text hits the threshold of 90 degrees and 180 degrees, the text rotates by 180 degrees. |
| none (None) | Specifies that text always rotates with the shape. |
| upr (Upright) | Specifies that when the text angle hits 45, 135, 225, or 315 degree thresholds, then it rotates by negative 90 degrees. |

#### ST\_AxisType (Axis Type)

This simple type defines different node sets in relation to the current context node.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ancst (Ancestor) | Specifies a set of nodes between the current context node and the root node, including the root node. |
| ancstOrSelf (Ancestor or Self) | Specifies a set of nodes between the current context node and the root node, including the root node and the context node. |
| ch (Child) | Specifies a set of children of the current context node. |
| des (Descendant) | Specifies a set of all nodes beneath the current context node. |
| desOrSelf (Descendant or Self) | Specifies a set of all nodes beneath the current context node, including the context node. |
| follow (Follow) | Specifies the set of nodes which are peers after the context node and all descendants of the peers. |
| followSib (Follow Sibling) | Specifies the set of nodes which are peers after the context node. |
| none (None) | Specifies no node. |
| par (Parent) | Specifies the parent node. |
| preced (Preceding) | Specifies the set of nodes which are peers before the context node and all the descendants of the peers. |
| precedSib (Preceding Sibling) | Specifies the set of nodes which are peers before the context node. |
| root (Root) | Specifies the top-most node of the diagram. |
| self (Self) | Specifies the calling context node. |

#### ST\_AxisTypes (Axis Type List)

This simple type represents a list of axis types.

#### ST\_BendPoint (Bend Point)

This simple type defines where a bend is to occur within a connection between two nodes.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| beg (Beginning) | The bend is to occur at the beginning of the connection. |
| def (Default) | The default bend is used. By default connections bend in the center. |
| end (End) | The bend is to occur at the end of the connection. |

#### ST\_Booleans (Boolean List.)

A list of booleans.

#### ST\_BoolOperator (Boolean Constraint)

This simple type specified Boolean operations which can be applied to compare constraints.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| equ (Equal) | Equal operator. |
| gte (Greater Than or Equal to) | Specifies the greater than or equal to Boolean operator. |
| lte (Less Than or Equal to) | Specifies the less than or equal to Boolean operator. |
| none (None) | Specifies a none Boolean operator |

#### ST\_Breakpoint (Breakpoint)

This simple type defines at what point the wrapping of nodes occurs for the snake algorithm.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bal (Balanced) | Specifies that the number of nodes in every row and every column should be equal. |
| endCnv (End of Canvas) | Specifies that nodes are added to the next column or row after filling the current column or row's space. |
| fixed (Fixed) | Specifies to use a user defined number of nodes in a column or row. |

#### ST\_CenterShapeMapping (Center Shape Mapping)

This simple type defines the behavior of the cycle algorithm.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| fNode (First Node) | Specifies a node which is always in the center of a cycle diagram. |
| none (None) | Specifies the normal layout of a cycle diagram. |

#### ST\_ChildAlignment (Child Alignment)

This simple type defines how to align a node in its allocated space.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Bottom) | Specifies to align the node to the bottom. |
| l (Left) | Specifies to align the node to the left. |
| r (Right) | Specifies to align the node to the right. |
| t (Top) | Specifies to align the node to the top. |

#### ST\_ChildDirection (Child Direction)

This simple type defines the layout direction of child nodes related to a specific parent node.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| horz (Horizontal) | Specifies that the child nodes are to be laid out |
| vert (Vertical) | Specifies that the child nodes are to be laid out vertically. |

#### ST\_ChildOrderType (Child Order)

This simple type specifies the child order for a given layout node.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Bottom) | Child order along the bottom. |
| t (Top) | Top child order. |

#### ST\_ClrAppMethod (Color Application Method Type)

This simple type defines the way a given set of colors is applied to a set of nodes or items across a diagram.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| cycle (Cycle) | The colors apply from A to B to A if A and B were the colors present. |
| repeat (Repeat) | The colors apply from A through B to A through B if A through B were the colors present. |
| span (Span) | The colors interpolate from A to B across the entire diagram if A and B were the colors present. |

#### ST\_ConnectorDimension (Connector Dimension)

This simple type defines the dimensionality of the connection between two nodes.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| 1D (1 Dimension) | Specifies a one dimensional connection, or rather a line. |
| 2D (2 Dimensions) | Specifies a two dimensional connection which has both width and height. |
| cust (Custom) | Specifies a custom connection type. |

#### ST\_ConnectorPoint (Connector Point)

This simple type defines different connection sites available on a node.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| auto (Auto) | Specifies that the algorithm determines the best connection site to use. |
| bCtr (Bottom Center) | Specifies that the bottom, center connection site is to be used. |
| bL (Bottom Left) | Specifies that the bottom, left connection site is to be used. |
| bR (Bottom Right) | Specifies that the bottom right connection site is to be used. |
| ctr (Center) | Specifies that the center connection site is to be used. |
| midL (Middle Left) | Specifies that the middle left connection site is to be used. |
| midR (Middle Right) | Specifies that the middle right connection site is to be used. |
| radial (Radial) | Specifies connections along a radial path to support the use of connections in cycle diagrams. |
| tCtr (Top Center) | Specifies that the top center connection site is to be used. |
| tL (Top Left) | Specifies that the top left connection site is to be used. |
| tR (Top Right) | Specifies that the top right connection site is to be used. |

#### ST\_ConnectorRouting (Connector Routing)

This simple type defines how the routing of a connection between two nodes is supposed to progress from node 1 to node 2.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bend (Bending) | Specifies a bending connection which bends at a right angle. |
| curve (Curve) | Specifies a connection which is curved. |
| longCurve (Long Curve) | Specifies a connection that is curved that has a greater radius than a simple curved connection. |
| stra (Straight) | Specifies a straight connection. |

#### ST\_ConstraintRelationship (Constraint Relationship)

This simple type specifies the types of constraint relationships which are present and can be used.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ch (Child) | The constraint should reference a child node. |
| des (Descendant) | The layout node can map to the descendants of the data point. |
| self (Self) | The layout node maps to the current data point. |

#### ST\_ConstraintType (Constraint Type)

This simple type defines the list of possible constraints available for use.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| alignOff (Alignment Offset) | This value defines the alignment offset for a node. |
| b (Bottom) | The bottom of the node. |
| begMarg (Beginning Margin) | Specifies the beginning margin. |
| begPad (Beginning Padding) | Specifies the beginning padding. |
| bendDist (Bending Distance) | Specifies the distance from the start of a connector to a bend in the connector. |
| bMarg (Bottom Margin) | Specifies the bottom margin. |
| bOff (Bottom Offset) | Specifies the bottom offset. |
| connDist (Connection Distance) | Specifies the connection distance. |
| ctrX (Center Height) | Specifies the center of the height. |
| ctrXOff (Center X Offset) | Specifies the center x coordinate offset. |
| ctrY (Center Width) | Specifies the center of the width. |
| ctrYOff (Center Y Offset) | Specifies the center y coordinate offset. |
| endMarg (End Margin) | Specifies the ending margin. |
| endPad (End Padding) | Specifies the end padding. |
| h (Height) | Specifies the height. |
| hArH (Arrowhead Height) | Specifies the height of the arrowhead portion of the connector. |
| hOff (Height Offset) | Specifies the amount to offset the height. |
| l (Left) | Specifies the left constraint. |
| lMarg (Left Margin) | Specifies the left margin. |
| lOff (Left Offset) | Specifies the left offset. |
| none (Unknown) | Unknown constraint. |
| primFontSz (Primary Font Size) | The primary font size. |
| pyraAcctRatio (Pyramid Accent Ratio) | Specifies the fraction of the width of the diagram that is reserved for the fly outs at their shortest distance. |
| r (Right) | Specifies the right constraint. |
| rMarg (Right Margin) | Specifies the right margin constraint. |
| rOff (Right Offset) | Specifies the right offset constraint. |
| secFontSz (Secondary Font Size) | The secondary font size. |
| secSibSp (Secondary Sibling Spacing) | The secondary sibling spacing. |
| sibSp (Sibling Spacing) | Specifies the minimum distance between sibling shapes. |
| sp (Spacing) | Specifies the spacing defined. |
| stemThick (Stem Thickness) | Specifies the thickness of the arrow’s shaft. |
| t (Top) | Specifies the top constraint. |
| tMarg (Top Margin) | Top margin constraint. |
| tOff (Top Offset) | Top offset constraint. |
| userA (User Defined A) | User defined information. |
| userB (User Defined B) | User defined information. |
| userC (User Defined C) | User defined information. |
| userD (User Defined D) | User defined information. |
| userE (User Defined E) | User defined information. |
| userF (User Defined F) | User defined information. |
| userG (User Defined G) | User defined information. |
| userH (User Defined H) | User defined information. |
| userI (User Defined I) | User defined information. |
| userJ (User Defined J) | User defined information. |
| userK (User Defined K) | User defined information. |
| userL (User Defined L) | User defined information. |
| userM (User Defined M) | User defined information. |
| userN (User Defined N) | User defined information. |
| userO (User Defined O) | User defined information. |
| userP (User Defined P) | User defined information. |
| userQ (User Defined Q) | User defined information. |
| userR (User Defined R) | User defined information. |
| userS (User Defined S) | User defined information. |
| userT (User Defined T) | User defined information. |
| userU (User Defined U) | User defined information. |
| userV (User Defined V) | User defined information. |
| userW (User Defined W) | User defined information. |
| userX (User Defined X) | User defined information. |
| userY (User Defined Y) | User defined information. |
| userZ (User Defined Z) | User defined information. |
| w (Width) | The width parameter. |
| wArH (Arrowhead Width) | Specifies the width of the arrowhead portion of the connector. |
| wOff (Width Offset) | Offsets the width by the specified amount. |

#### ST\_ContinueDirection (Continue Direction)

This simple type specifies the behavior of the direction that additional nodes are added to new rows or columns in the snake algorithm.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| revDir (Reverse Direction) | Specifies that the direction is to be revered on a subsequent row or column. |
| sameDir (Same Direction) | Specifies that the direction is to be maintained on a subsequent row or column. |

#### ST\_CxnType (Connection Type)

This simple type defines the different types of relationships that can be defined between two nodes.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| parOf (Parent Of) | This defines a parent-child relationship in the sense that node X is a parent of node Y. |
| presOf (Presentation Of) | A presentation type relationship. This type of relationship exists to actually present data. |
| presParOf (Presentation Parent Of) | A relationship defining a parent of a presentation node. |
| unknownRelationship (Unknown Relationship) | The type of relationship is unknown. |

#### ST\_DiagramHorizontalAlignment (Horizontal Alignment)

This simple type defines the horizontal alignment.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ctr (Center) | Specifies center alignment. |
| l (Left) | Specifies left alignment. |
| none (None) | Specifies no alignment defined. |
| r (Right) | Specifies right alignment. |

#### ST\_DiagramTextAlignment (Text Alignment)

This simple type defines alignment types for text within a node.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ctr (Center) | Specifies center aligned text. |
| l (Left) | Specifies left aligned text. |
| r (Right) | Specifies right aligned text. |

#### ST\_Direction (Diagram Direction Definition)

This simple type defines the possible values for a diagram's direction when displayed in an application.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| norm (Normal Direction) | This value specifies that the direction of the diagram should not be switched. |
| rev (Reversed Direction) | This value specifies that the direction of the diagram should be switched. |

#### ST\_ElementType (Data Point Type)

This simple type defines the different types of data points which are supported.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| all (All) | Defined as utilizing all of the nodes. |
| asst (Assistant) | The assistant nodes. |
| doc (Document) | Specifies the a node on the document level. |
| node (Node) | Data nodes that are children of other data nodes. |
| nonAsst (Non Assistant) | Selects all of the non-assistant nodes. |
| nonNorm (Non Normal) | Selects the non-normal elements. |
| norm (Normal) | Selects a normal elements. |
| parTrans (Parent Transition) | The transition associated with the parent node. |
| pres (Presentation) | This refers to a presentation node. |
| sibTrans (Sibling Transition) | Use only sibling transitions between data nodes. These transitions represent sibling relationships between nodes, and are frequently mapped to arrows between shapes in the drawing. A sibTrans value is sometimes used to create white space between nodes. |

#### ST\_ElementTypes (Diagream Layout Node Type List)

A list of diagram layout node types.

#### ST\_FallbackDimension (Fallback Dimension)

Specifies the dimensionality by which nodes can grow or shrink automatically.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| 1D (1 Dimension) | Specifies that the node can grow or shrink by its height or its width, but not both. |
| 2D (2 Dimensions) | Specifies that the node can grow or shrink by both height and width. |

#### ST\_FlowDirection (Flow Direction)

This simple type defines how the progression of new nodes are to be entered into the diagram.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| col (Column) | Specifies that the layout occurs in a column-based fashion. This would mean laying out the nodes from top to bottom, before moving left to right. |
| row (Row) | Specifies that the layout occurs in a row-based fashion. This would mean laying out the nodes from left to right before moving from top to bottom. |

#### ST\_FunctionArgument (Function Argument)

Conditional expression function argument.

#### ST\_FunctionOperator (Function Operator)

This simple type defines the condition expression functions which can be used to perform operations.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| equ (Equal) | Equal function operator. |
| gt (Greater Than) | Specifies the grater than function operator. |
| gte (Greater Than or Equal to) | Specifies the greater than or equal to function operator. |
| lt (Less Than) | Specifies the less than function operator. |
| lte (Less Than or Equal to) | Specifies the less than or equal to function operator. |
| neq (Not Equal To) | Specifies the not equal to function operator. |

#### ST\_FunctionType (Function Type)

This simple type defines the set of available conditional expression function types present for use.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| cnt (Count) | Specifies a count. |
| depth (Depth) | Specifies the depth. |
| maxDepth (Max Depth) | Defines the maximum depth. |
| pos (Position) | Retrieves the position of the node in the specified set of nodes. |
| posEven (Position Even) | Returns 1 if the specified node is at an even numbered position in the data model. |
| posOdd (Position Odd) | Returns 1 if the specified node is in an odd position in the data model. |
| revPos (Reverse Position) | Reverse position function. |
| var (Variable) | Used to reference a variable. |

#### ST\_FunctionValue (Function Value)

Conditional expression function value.

#### ST\_GrowDirection (Grow Direction)

This simple type defines different starting locations for nodes within the snake algorithm.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bL (Bottom Left) | Specifies the placement of nodes is to start in the bottom left corner. |
| bR (Bottom Right) | Specifies the placement of nodes is to start in the bottom right corner. |
| tL (Top Left) | Specifies the placement of nodes is to start in the top left corner. |
| tR (Top Right) | Specifies the placement of nodes is to stat in the top right corner. |

#### ST\_HierarchyAlignment (Hierarchy Alignment)

This simple type defines different relative locations of child nodes and their descendants to a parent node within a hierarchy diagram.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bCtrCh (Bottom Center Child) | Specifies the child nodes are placed below the parent node and that they are center aligned to the parent node. |
| bCtrDes (Bottom Center Descendant) | Specifies the descendant nodes are placed below the parent node and that they are center aligned to the parent node. |
| bL (Bottom Left) | Specifies the child and descendant nodes are placed below the parent node and that the set is left aligned. |
| bR (Bottom Right) | Specifies the child and descendant nodes are placed below the parent node and the set is right aligned. |
| lB (Left Bottom) | Specifies the child and descendant nodes are placed to the left of the parent node and that the set is bottom aligned. |
| lCtrCh (Left Center Child) | Specifies the child nodes are placed to the left of the parent node and that the set is center aligned. |
| lCtrDes (Left Center Descendant) | Specifies the descendant nodes are placed to the left of the parent node and that the set is center aligned. |
| lT (Left Top) | Specifies the child and descendant nodes are placed to the left of the parent node and that the set is top aligned. |
| rB (Right Bottom) | Specifies the child and descendant nodes are placed to the right of the parent node and that the set is bottom aligned. |
| rCtrCh (Right Center Children) | Specifies the child nodes are placed to the right of the parent node and that the set is center aligned. |
| rCtrDes (Right Center Descendants) | Specifies the descendant nodes are placed to the right of the parent node and that the set is center aligned. |
| rT (Right Top) | Specifies the child and descendant nodes are placed to the right of the parent node and that the set is top aligned. |
| tCtrCh (Top Center Children) | Specifies the child nodes are placed above the parent node and that the set is center aligned. |
| tCtrDes (Top Center Descendants) | Specifies the descendant nodes are placed above the parent node and that the set is center aligned. |
| tL (Top Left) | Specifies the child and descendant nodes are placed above the parent node and that the set is left aligned. |
| tR (Top Right) | Specifies the child and descendant nodes are placed above the parent node and that the set is right aligned. |

#### ST\_HierBranchStyle (Hierarchy Branch Style Definition)

This simple type specifies the possible values for the branch style of a hierarchy diagram.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| hang (Hanging) | The branch style is hanging from the parent. |
| init (Initial) | This means that the value has not been set. |
| l (Left) | The branch style falls off the left. |
| r (Right) | The branch style falls off the right. |
| std (Standard) | The standard branch style is to be used. |

#### ST\_HueDir (Hue Direction)

When given two colors to interpolate between, one can go in one of two directions around the color wheel to perform the interpolation. This simple type defines that direction.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ccw (Counterclockwise Hue Direction) | A hue interpolation in the counterclockwise direction. |
| cw (Clockwise Hue Direction) | A hue interpolation in the clockwise direction. |

#### ST\_Index1 (1-Based Index)

A 1-based index.

#### ST\_Ints (Integer List)

A list of integers.

#### ST\_LayoutShapeType (Layout Shape Type)

All of the available shape types.

#### ST\_LinearDirection (Linear Direction)

This simple type defines the direction of growth of new nodes.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| fromB (From Bottom) | Specifies growth to start from the bottom. |
| fromL (From Left) | Specifies growth to start from the left. |
| fromR (From Right) | Specifies growth to start from the right. |
| fromT (From Top) | Specifies growth to start from the Top |

#### ST\_ModelId (Model Identifier)

The unique ID of the element within the data model. Model Identifiers can be either longs or guids.

#### ST\_NodeCount (Number of Nodes Definition)

This simple type defines a count of the number of nodes for a property in a diagram. A value of -1 shall mean that the value is unbounded.

#### ST\_NodeHorizontalAlignment (Node Horizontal Alignment)

This simple type defines the horizontal alignment of a node.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ctr (Center) | Specifies center alignment. |
| l (Left) | Specifies left alignment. |
| r (Right) | Specifies right alignment. |

#### ST\_NodeVerticalAlignment (Node Vertical Alignment)

This simple type defines the vertical alignment of a node.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Bottom) | Specifies bottom alignment. |
| mid (Middle) | Specifies middle alignment. |
| t (Top) | Specifies top alignment. |

#### ST\_Offset (Offset)

This simple type defines whether or not subsequent rows or columns in the snake algorithm are offset from the preceding row or column.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ctr (Center) | Specifies no offset. |
| off (Offset) | Specifies that the nodes are shifted by some amount relative to the preceding row or column. |

#### ST\_OutputShapeType (Output Shape Type)

Shapes which are special specifically for a DrawingML diagram.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| conn (Connection) | Connection shape type. |
| none (None) | None. |

#### ST\_ParameterId (Parameter Identifier)

This simple type defines algorithm parameters which can be modified in order to adjust the behavior of algorithms for use in layout nodes.

|  |  |  |
| --- | --- | --- |
| **Enumeration Value** | **Description** | |
| alignTx (Text Alignment) | This value defines how the text is aligned in a node. | |
| ar (Aspect Ratio) | Specifies the aspect ratio (width to height) of the composite node to use when determining child constraints. A value of 0 means leave the width and height constraints as is. The algorithm can temporarily shrink one dimension to achieve that ratio. [*Example*: If a composite node has a width constraint of 20 and height constraint of 10, and if ar=1.5, composite uses a width value of 15 to calculate the composite node’s child constraints. However, the algorithm does not propagate this value to other nodes. *end example*] | |
| autoTxRot (Auto Text Rotation) | Auto text rotation. | |
| begPts (Beginning Points) | Beginning Points | |
| begSty (Beginning Arrowhead Style) | Beginning Arrowhead Style | |
| bendPt (Bend Point) | The bend point. | |
| bkpt (Breakpoint) | Specifies the point at which the diagram starts to snake. The value bal specifies that snaking begin at an | |
| bkPtFixedVal (Breakpoint Fixed Value) | | Specifies where the snake should break, if bkpt=fixed. | |
| chAlign (Child Alignment) | | Specifies the alignment of the children. | |
| chDir (Child Direction) | | The child direction. | |
| connRout (Connection Route) | | The route of the connection. | |
| contDir (Continue Direction) | | Specifies the direction of the subsequent row or column. [*Example*: If the algorithm initially places the nodes from left to right, revDir places the nodes in the next row from right to left. However if the algorithm uses contDir, the nodes on the next row are arranged from left to right. *end example*] | |
| ctrShpMap (Center Shape Mapping) | | Specifies where to place nodes in relation to the center circle. | |
| dim (Connector Dimension) | | Specifies the connector dimension. | |
| dstNode (Destination Node) | | Specifies the name of the layout node from which to end the connection from. | |
| endPts (End Points) | | Specifies the end points. | |
| endSty (End Style) | | Specifies the end style. | |
| fallback (Fallback Scale) | | 1D specifies fallback. It only scales in one dimension. 2D specifies fallback. It scales in both dimensions equally. | |
| flowDir (Flow Direction) | | Specifies whether nodes are arranged in rows or columns. | |
| grDir (Grow Direction) | | Specifies from which corner the snake grows. [*Example*: If the algorithm uses a top left value, the snake grows from the top left. *end example*] | |
| hierAlign (Hierarchy Alignment) | | The alignment of the hierarchy. | |
| horzAlign (Horizontal Alignment) | | Aligns all the child nodes within the space reserved for the parent and adjusts child positions in the x direction. | |
| linDir (Linear Direction) | | Specifies the linear direction. | |
| lnSpAfChP (Line Spacing After Children Paragraph) | | Line spacing after children. | |
| lnSpAfParP (Line Spacing After Parent Paragraph) | | Line spacing after the parent. | |
| lnSpCh (Line Spacing Children) | | Line spacing of the children | |
| lnSpPar (Line Spacing Parent) | | Line spacing of the parent. | |
| nodeVertAlign (Node Vertical Alignment) | Specifies how child nodes are aligned within the extents of the canvas. Same as nodeHorzAlign, but in the y direction. | |
| off (Offset) | Specifies the offset. | |
| parTxLTRAlign (Parent Text Left-to-Right Alignment) | Specifies the paragraph alignment of parent text when the shape has only parent text. This parameter applies when the text direction is left to right. | |
| parTxRTLAlign (Parent Text Right-to-Left Alignment) | Specifies the paragraph alignment of parent text when the shape has only parent text. This parameter applies when the text direction is right to left. | |
| pyraAcctBkgdNode (Pyramid Accent Background Node) | If pyramid has a composite child node, specifies the name of the node that is a child of the composite that makes up the child flyout shape. If the node specifies a shape of the nonIsoscelesTrapezoid autoshape, it modifies the adjust handles in order to fit the flyout flush against the side of the pyramid. | |
| pyraAcctPos (Pyramid Accent Position) | Specifies the placement of the flyout grandchildren. | |
| pyraAcctTxMar (Pyramid Accent Text Margin) | Specifies the placement of one edge of the child text (grandchild node). If the value is step, the text is against the edge of the pyramid. If the value is stack, the text aligns. | |
| pyraAcctTxNode (Pyramid Accent Text Node) | If pyramid has a composite child node, specifies the child node that should hold the child text. | |
| pyraLvlNode (Pyramid Level Node) | If pyramid has a composite child node, specifies the name of the node that is a child of the composite that makes up the pyramid itself. If the node specifies a trapezoid shape, it modifies the adjustment handles to construct a pyramid. | |
| rotPath (Rotation Path) | The rotation path specified. | |
| rtShortDist (Route Shortest Distance) | If true, the connector is routed through the shortest distance between the points. | |
| secChAlign (Secondary Child Alignment) | The secondary child alignment. | |
| secLinDir (Secondary Linear Direction) | The secondary linear direction. | |
| shpTxLTRAlignCh (Shape Text Left-to-Right Alignment) | Specifies the paragraph alignment of all text within the shape when the shape contains both parent and child text. This parameter applies when the text direction is left to right. | |
| shpTxRTLAlignCh (Shape Text Right-to-Left Alignment) | Specifies the paragraph alignment of all text within the shape when the shape contains both parent and child text. This parameter applies when the text direction is right to left. | |
| spanAng (Span Angle) | Specifies the angle the cycle spans. Final shapealign text is placed at stAng+spanAng, unless spanAng=360. In that case, the algorithm places the text so that shapes do not overlap. | |
| srcNode (Source Node) | Specifies the name of the layout node from which to start the connection. | |
| stAng (Start Angle) | Specifies the angle at which the first shape is placed. Angles are in degrees, measured clockwise from a line pointing straight upward from the center of the cycle. | |
| stBulletLvl (Start Bullets At Level) | Specifies whether bullets start at the top level (1) or with children (2). | |
| stElem (Start Element) | Specifies the point type of the layout node to use as the first shape in the cycle. | |
| txAnchorHorz (Text Anchor Horizontal) | Specifies the y-axis position of the text area within a shape. | |
| txAnchorHorzCh (Text Anchor Horizontal With Children) | Specifies that the definition can allow a different text anchoring on the x-axis, if child nodes exist in the shape. | |
| txAnchorVert (Text Anchor Vertical) | Specifies the x-axis position of the text area within a shape. | |
| txAnchorVertCh (Text Anchor Vertical With Children) | Specifies that the definition can allow a different text anchoring on the y-axis, if child nodes exist in the shape. | |
| txBlDir (Text Block Direction) | Specifies whether the text block is vertical or horizontal. | |
| txDir (Text Direction) | Specifies where the text of the first node starts. | |
| vertAlign (Vertical Alignment) | Aligns all the child nodes within the space reserved for the parent and adjusts child positions in the y direction. | |

#### ST\_ParameterVal (Parameter Values)

Specifies the list of parameter types that can be used by a diagram.

#### ST\_PtType (Point Type)

This simple type defines the different point types which can be utilized to create diagrams in DiagramML.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| asst (Assistant Element) | This point type is used in a hierarchy diagram to represent an assistant element. |
| doc (Document) | This point type specifies a document type point. This point type can be thought of as the root node associated with the document itself. |
| node (Node) | The node point type specifies a basic point type. |
| parTrans (Parent Transition) | This point type specifies a parent transition element. |
| pres (Presentation) | Specifies a presentation point type. |
| sibTrans (Sibling Transition) | This point type specifies a sibling transition element. |

#### ST\_PyramidAccentPosition (Pyramid Accent Position)

This simple type defines different positioning for the accent shapes which can be associated with a pyramid algorithm.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| aft (Pyramid Accent After) | Specifies that the accent shapes are to be placed to the right of the pyramid. |
| bef (Before) | Specifies that the accent shapes are to be placed to the left of the pyramid. |

#### ST\_PyramidAccentTextMargin (Pyramid Accent Text Margin)

This simple type defines different ways to lay out text in the accent shape for a pyramid algorithm.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| stack (Stack) | Specifies that all accent shape text is to be left aligned. |
| step (Step) | Specifies that all accent shape text is to be relative to the pyramid. |

#### ST\_ResizeHandlesStr (Resize Handle)

This simple type defines the possible behaviors when resizing shapes within a diagram. Because the size of the shape plays a large role in the overall layout of other nodes within the diagram, there are two ways resize can occur on a node.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| exact (Exact) | This value specifies that the resize of the shape occurs and sizes exactly to the size the user defines, which causes all other shapes in the diagram to shrink or grow accordingly. |
| rel (Relative) | This value specifies that resize operations happen relatively. This means that the relative size difference between nodes is maintained before and after the resize operation. |

#### ST\_RotationPath (Rotation Path)

This simple type defines rotation properties for nodes within the cycle algorithm.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| alongPath (Along Path) | Specifies that the nodes should rotate in relation to their placement along the cycle. |
| none (None) | Specifies that the nodes should not rotate. |

#### ST\_SecondaryChildAlignment (Secondary Child Alignment)

This simple type defines different alignment properties of the both hanging layout type of the hierarchy algorithm.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Bottom) | Specifies that the children nodes should be bottom aligned. |
| l (Left) | Specifies that the children nodes should be left aligned. |
| none (None) | Specifies no alignment. |
| r (Right) | Specifies that the children nodes should be right aligned. |
| t (Top) | Specifies that the children nodes should be top aligned. |

#### ST\_SecondaryLinearDirection (Secondary Linear Direction)

This simple type defines different directions for the nodes in a both hanging layout in the hierarchy algorithm.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| fromB (From Bottom) | Specifies that the nodes begin from the bottom and move upward. |
| fromL (From Left) | Specifies that the nodes begin from the left and move right. |
| fromR (From Right) | Specifies that the nodes begin from the right and move left. |
| fromT (From Top) | Specifies that the nodes begin from the top and move downward. |
| none (None) | Specifies no direction. |

#### ST\_StartingElement (Starting Element)

This simple type defines behavior for the first node in a cycle algorithm.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| node (Node) | Specifies that a node should be placed first. |
| trans (Transition) | Specifies that a transition should be placed first. |

#### ST\_TextAnchorHorizontal (Text Anchor Horizontal)

This simple type defines horizontal anchor points for text.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| ctr (Center) | Specifies text to be anchored to the center. |
| none (None) | Specifies no horizontal text anchor. |

#### ST\_TextAnchorVertical (Text Anchor Vertical)

This simple type defines vertical anchor points for text.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Bottom) | Specifies text to be anchored to the bottom. |
| mid (Middle) | Specifies text to be anchored to the middle. |
| t (Top) | Specifies text to be anchored to the top. |

#### ST\_TextBlockDirection (Text Block Direction)

This simple type defines different layout options for text within a node.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| horz (Horizontal) | Specifies that the text is to be horizontal. |
| vert (Vertical Direction) | Specifies that the text is to be vertical. |

#### ST\_TextDirection (Text Direction)

This simple type defines different way the growth of additional text can occur within a node.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| fromB (From Bottom) | Specifies additional text grows from the bottom. |
| fromT (From Top) | Specifies additional text grows from the top. |

#### ST\_UnsignedInts (Unsigned Integer List)

A list of unsigned integers.

#### ST\_VariableType (Variable Type)

Conditional expression variable type.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| animLvl (Animation Level) | Specifies the animation level |
| animOne (Animate One) | Specifies animate as one. |
| bulEnabled (Bullets Enabled) | Specifies bullets enabled. |
| chMax (Child Max) | The maximum number of children. |
| chPref (Child Preference) | The preferred number of children. |
| dir (Direction) | Specifies the direction of the diagram. |
| hierBranch (Hierarchy Branch) | The hierarchy branch. |
| none (Unknown) | Unknown variable type. |
| orgChart (Organizational Chart Algorithm) | Algorithm that lays out an org chart. |
| resizeHandles (Resize Handles) | Specifies the resize handles. |

#### ST\_VerticalAlignment (Vertical Alignment)

This simple type defines different vertical alignment parameters.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b (Bottom) | Specifies bottom aligned. |
| mid (Middle) | Specifies middle aligned. |
| none (None) | Specifies no vertical alignment. |
| t (Top) | Specifies top aligned. |

#### ST\_PrSetCustVal (Property Set Customized Value)

This simple type defines customization percentage values for certain elements in DrawingML.

# Shared MLs Reference Material

## Math

The following documentation specifies the XML representation of mathematical text for OOXML. This shared ML is known as that Office Math Markup Language (OMML). Mathematical text represented by OMML includes but is not limited to: equations, expressions, formulas, matrices and other mathematical elements. The outermost OMML element of an instance of mathematical text in display mode is oMathPara, a math paragraph of one or more instances of mathematical text. Each instance of mathematical text inside the math paragraph is represented as a single oMath. Inside each oMath is a combination of mathematical runs (r) and objects or functions such as accents (acc) or fractions(f).

### Elements

The following elements describe the contents of mathematical text.

#### acc (Accent)

This element specifies the accent function, consisting of a base and a combining diacritical mark. If accPr is omitted, the default accent is U+0302 (COMBINING CIRCUMFLEX ACCENT).

#### accPr (Accent Properties)

This element specifies the properties of the Accent function. If chr is omitted, the default accent character is U+0302 (COMBINING CIRCUMFLEX ACCENT

#### aln (Alignment)

This element specifies the alignment property on the box object. It is utilized only when the box is designated as an operator emulator. When 1 or true, this operator emulator serves as an alignment point; that is, designated alignment points in other equations can be aligned with it.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### alnScr (Align Scripts)

This element specifies the alignment of scripts in the subscript/superscript function. When 1 or true, subscripts and superscripts are aligned to each other. When 0 or false, they are kerned to the shape of the base. If this element is omitted, scripts are not aligned. In other words, when the element is absent, the default is for the sub-superscript object to not align the superscript and subscript with each other.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### argPr (Argument Properties)

This element specifies any properties of the math argument. : The XML below represents the argSz attribute on the base element of a box:

#### argSz (Argument Size)

This element specifies the size, or script level, of an argument. If the element is omitted, the default argument size is 0.

|  |  |
| --- | --- |
| Attributes | Description |
| val (Value) | Specifies a value between -2 and 2 for the property defined by the parent XML element. The positive or negative sign specifies in which direction to change argument size; the absolute value specifies by how much. |

#### bar (Bar)

This element specifies the bar function, consisting of a base argument and an overbar or underbar, as in and .

#### barPr (Bar Properties)

This element specifies properties of the bar function. If this element is omitted, the bar assumes its default location of top (the mathematical overbar).

#### baseJc (Matrix Base Justification)

This element specifies the justification of the matrix. Text outside of the matrix can be aligned with the bottom, top, or center of a matrix object. If this element is omitted, the matrix assumes center justification. In other words, whether the element is absent or present without the val attribute, the default of the val attribute is center.

|  |  |
| --- | --- |
| Attributes | Description |
| val (Value) | Specifies the vertical justification parent element respect to surrounding text. Possible values are top, bottom and center.. |

#### begChr (Delimiter Beginning Character)

This element specifies the beginning, or opening, delimiter character. Mathematical delimiters are enclosing characters such as parentheses, brackets and braces. If this element is omitted, the default begChr is '('. In other words, when the element is absent, the default is for the delimiter object beginning character to be Unicode character U+0028 (LEFT PARENTHESIS).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the character used by the parent element. When it is omitted, the parent uses its assigned default. |

#### borderBox (Border-Box Object)

This element specifies the Border Box object, consisting of a border drawn around an instance of mathematical text (such as a formula or equation), as in . If borderBoxPr is omitted, then the default behavior of borderBox is a rectangular border (as shown in the “abc” example below).

#### borderBoxPr (Border-Box Properties)

This element specifies the properties of the Border Box object, which dictate the types of lines that can be drawn as part of the border.

#### box (Box Object)

This element specifies the box object, which is used to group components of an equation or other instance of mathematical text. A boxed object can (for example) serve as an operator emulator with or without an alignment point, serve as a line break point, have associated argSz, or be grouped such as not to allow line breaks within. If boxPr is omitted, all properties will be “false” by default.

#### boxPr (Box Properties)

This element specifies properties of the Box object, for example, whether the Box serves as operator emulator with or without an alignment point, serves as a line break point, or receives the correct spacing for the mathematical differential.

#### brk (Break)

This element specifies whether there is a line break at the start of a run, or at the start of the Box object, such that the line wraps at the start of the run or box object. These user-defined line breaks occur when the XML tag <m:brk/> is encountered and does not follow a mathematical "order of precedence". If this element is omitted, a manual break is not inserted. In other words, when the element is absent, the default is for the parent structure to not manually break onto the next line. When the element is present and the val attribute is absent, the default of the val attribute is 0 meaning that this property’s parent structure manually breaks onto the next line and is aligned with the beginning of the previous line.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| alnAt (Index of Operator to Align | Specifies the index of the operator on the previous line of mathematical text which shall be used as the alignment point for the current line of mathematical text . A line can be aligned to any operator on the previous line; this attribute specifies exactly which operator shall be the target of that alignment in cases where there are multiple operators. If alnAt is omitted, then all runs (r tag) that follow a brk tag will align with the left margin of the first run of mathematical text. |

#### brkBin (Break on Binary Operators)

This element specifies how binary operators are treated when they coincide with a line break. If this element is omitted, the line break occurs before the binary operator. That is, the binary operator is the first element on the wrapped line.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies where to break on binary operators. Possible values are before, after and repeat. |

#### brkBinSub (Break on Binary Subtraction)

This element specifies how the subtraction operator is treated when it coincides with a line break, when brkBin is set to repeat. If this element is omitted, the subtraction operator is repeated before and after the break.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies how the subtraction operator is treated when it coincides with a line break, when brkBin is set to repeat. Possible values are--,-+ and+-. |

#### cGp (Matrix Column Gap)

This element represents the (custom) column gap spacing information; the default value is 0 (which corresponds to 1 em). This value is interpreted differently depending on the value of cGpRule (§22.1.2.19). cGpis not used unless the value ofcGpRule is 3 or 4. When cGpRule is omitted, the default spacing between matrix columns is 1 em (a val attribute value of 0).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the amount of space between columns of the parent element (for cGp/cSp) or rows (for rSp). The manner in which this value is determined depends on the setting of the rule of the parent element. |

#### cGpRule (Matrix Column Gap Rule)

This element specifies the type of gap (horizontal spacing) between columns of a matrix; the default is 0.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the type of spacing between rows and/or columns. Possible values are 0, 1, 2, 3, or 4, whose definitions are contained in the following table: |

#### chr (Character)

This element specifies the character to be attached to the base of an accent object, a group character object, or an n-ary operator object. When the parent element is accPr, the chr value should be within the range of (U+0300–U+036F) or (U+20D0–U+20EF). When the parent element is group ChrPr, the chr value should be a horizontal stretch character, such as U+2190 (LEFTWARD ARROW). When the parent element is naryPr, the chr value should be an n-ary operator such as U+222B (INTEGRAL).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the character used by the parent element. When it is omitted, the parent uses its assigned default. |

#### count (Matrix Column Count)

This element specifies the number of columns to which a property applies.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the number of columns to which a column property applies. |

#### cSp (Minimum Matrix Column Width)

This element specifies the minimum column width of a matrix. The actual column width of a matrix will be the greater of either the width of the column’s widest argument or cSp. This additional spacing can be added to enhance appearance. If this element is omitted, the default minimum column width is 0. Whether the element is absent or present without the val attribute, the default of the val attribute is 0. The cGp gap spacing (also referred to as “Column Gap” or “Gap Width”) is added to the cSp(Minimum Matrix Column Width) to determine the total Matrix Column Spacing (distance between the same edges of different columns). The value of cSp is interpreted as twips (a twip is 1/20th of a point). Therefore, a spacing of1point will be set by a cSp value of 20. This is the only use for cSp. There is no corresponding cSp Rule. The following image depicts how cGp and cSp work together to define matrix column spacing in a 2x2 matrix:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the amount of space between columns of the parent element (for cGp/cSp) or rows (for rSp). The manner in which this value is determined depends on the setting of the rule of the parent element. |

#### ctrlPr (Control Properties)

This element specifies properties on control characters; that is, object characters that cannot be selected. Examples of control characters are n-ary operators (excluding their limits and bases), fraction bars (excluding the numerator and denominator) and grouping characters (excluding the base). ctrlPr allows formatting properties to be stored on these control characters. The control character inherits its formatting from the paragraph formatting; ctrlPr contains the formatting differences between the control character and the paragraph formatting.

#### d (Delimiter Object)

This element specifies the delimiter object, consisting of opening and closing delimiters (such as parentheses, braces, brackets and vertical bars) and an element contained inside. The delimiter may have more than one element, with a designated separator character between each element.

#### defJc (Default Justification)

This element specifies the default justification of display math, at the document level. Individual instances of mathematical text can overrule the default setting. If this element is omitted, the default justification is centerGroup. Whether the element is absent or present without the val attribute, the default of the val attribute is centerGroup.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the default justification of mathematical text in the document. Possible values are center, centerGroup, left and right. |

#### deg (Degree)

This element specifies the degree in the mathematical radical. This element is optional. When omitted, the square root function, as in, is assumed.

#### degHide (Hide Degree)

This element specifies the per-object option to hide the degree of a radical. Every rad has a deg, but the deg can appear or not appear. When degHide is set to 1 or true, the degree is not shown, as in (XML shown below). When degHide is omitted, the default is 0 or false; that is, the degree is not hidden. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### den (Denominator)

This element specifies the denominator of a fraction.

#### diff (Differential)

The element specifies the differential property on box. When 1 or true, the box acts as a differential (e.g., 𝑑𝑥 in an integrand) and receives the appropriate horizontal spacing for the mathematical differential. When this property is omitted, the box is not treated as a differential.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### dispDef (Use Display Math Defaults)

This element specifies the document-level property to overwrite paragraph settings for mathematical text. When omitted, this element is set to1ortrueand special math settings are applied. Whether the element is absent or present without the val attribute, the default of the val attribute is 1 meaning that this option is applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### dPr (Delimiter Properties)

This element specifies the properties of d, including the enclosing and separating characters and the properties that affect the shape of the delimiters.

#### e (Element (Argument))

This tag, which is an abbreviation for “element”, serves several functions (18 total) including that of the base argument of a mathematical object or function, the elements in an array and the elements in boxes. If all subelements are omitted, this element specifies the presence of an empty argument.

|  |  |
| --- | --- |
| **Parent Element** | **Use** |
| acc | Accent base argument |
| bar | Argument to which the bar is applied |
| borderBox | Argument around which the border box is drawn |
| box | Argument inside the abstract box |
| d | Argument inside the delimiters |
| eqArr | Each instance of mathematical text in the single-column array |
| func | Math argument list of the function |
| groupChr | Group character base |
| limLow | Base of the lower limit |
| limUpp | Base of the upper limit |
| mr | Each element in the matrix row |
| nary | n-ary and, e.g., integrand for an integral, summand for a summation |
| phant | Argument for the phantom |
| rad | Radicand |
| sPre | Base of the prescript object |
| sSub | Base of the subscript object |
| sSubSup | Base of the subsup object |
| sSup | Base of the superscript object |

#### endChr (Delimiter Ending Character)

This element specifies the ending, or closing, delimiter character. Mathematical delimiters are enclosing characters such as parentheses, brackets and braces. If this element is omitted, the default endChr is ')'. In other words, when the element is absent, the default is for the delimiter object beginning character to be Unicode character U+0029 (RIGHT PARENTHESIS).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the character used by the parent element. When it is omitted, the parent uses its assigned default. |

#### eqArr (Array Object)

This element specifies the Array object (sometimes referred to as "Equation Array", despite its ability to hold mathematical text other than equations), an object consisting of one or more equations, expressions, or other mathematical text runs that can be vertically justified as a unit with respect to surrounding text on the line. Alignment of multiple points within each run of mathematical text can occur within the array through the use of align values and spacer values. An *align value* is an ampersand within the array which acts as an alignment point (as described in §22.1.2.3). A *spacer value* is an ampersand (represented by "&amp;" in the example below) within the array which designates where space can be added in order to align the align values on different rows of the array. Within each argument in the array, every odd ampersand is an align value and every even ampersand is a spacer value (as well, the beginning of each argument provides an implied spacer value). If eqArrPr is omitted, then the default values for its properties will be used. These defaults are:

|  |  |
| --- | --- |
| **Property** | **Default Value** |
| baseJc | “center” |
| ctrlPr | <The character property of the first control character will be the character property of the first character in the eqArr object > |
| maxDist | “0” |
| objDist | “0” |
| rSp | “0” |
| rSpRule | “0” <single> |

#### eqArrPr (Array Properties)

This element specifies the properties of the array object, including the vertical justification of the object and layout inside the object.

#### f (Fraction Object)

This element specifies the fraction object, consisting of a numerator and denominator separated by a fraction bar. The fraction bar can be horizontal or diagonal, depending on the fraction properties. The fraction object is also used to represent the stack function, which places one element above another, with no fraction bar.

#### fName (Function Name)

This element specifies the name of the function in the Function-Apply object func. For example, function names are sin and cos.

#### fPr (Fraction Properties)

This element specifies the properties of the fraction object f. Properties of the Fraction object include the type or style of the fraction. The fraction bar can be horizontal or diagonal, depending on the fraction properties. The fraction object is also used to represent the stack function, which places one element above another, with no fraction bar.

#### func (Function Apply Object)

This element specifies the Function-Apply object, which consists of a function name and an argument element (e) acted upon. It is often applied using a form of linear format. For example, in the linear format described in Unicode Technical Article #28, this object is applied by using the Function Application character (U+2061).

#### funcPr (Function Properties)

This element specifies properties such as ctrlPr that can be stored on the function apply object func.

#### groupChr (Group-Character Object)

This element specifies the Group-Character object, consisting of a character drawn above or below text, often with the purpose of visually grouping items.

#### groupChrPr (Group-Character Properties)

This element specifies the properties of the Group-Character object groupChr. These properties can be used to specify the character placed above or below the argument and the position of the character. When omitted, character⏟(U+23DF, BOTTOM CURLY BRACKET) is used as the chr and its pos is set to bot.

#### grow (n-ary Grow)

This element specifies the growth property of n-ary operators. When 0 or false, n-ary operators such as integrals and summations do not grow to match the size of their operand height. When 1 or true, the n-ary operator grows vertically to match its operand height. If this property is omitted, grow is set to 0.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### hideBot (Hide Bottom Edge)

This element specifies the hidden or shown state of the bottom edge of borderBox. When this element is omitted, the bottom edge is shown. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### hideLeft (Hide Left Edge)

This element specifies the hidden or shown state of the left edge of borderBox. When this element is omitted, the edge is shown. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### hideRight (Hide Right Edge)

This element specifies the hidden or shown state of the right edge of borderBox. When this element is omitted, the edge is shown. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### hideTop (Hide Top Edge)

This element specifies the hidden or shown state of the top edge of borderBox. When this element is omitted, the edge is shown. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### interSp (Inter-Equation Spacing)

This element specifies spacing between equations, expressions, or other instances of mathematical text within a display math paragraph, in twips.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value, in twips, of the parent element. |

#### intLim (Integral Limit Locations)

This element specifies the document setting for the default placement of integral limits, when converted from a linear form to a two-dimensional output (professional form). Limits can be either centered above and below the integral, or positioned just to the right of the operator, as in:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the default location of limits on the parent object. Possible values are subSup and undOvr. |

#### intraSp (Intra-Equation Spacing)

This element specifies the spacing between adjacent display math paragraphs, in twips. If this element is omitted, no spacing is applied between adjacent math paragraphs.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value, in twips, of the parent element. |

#### jc (Justification)

This element specifies justification of the math paragraph (a series of adjacent instances of mathematical text within the same paragraph). A math paragraph can be Left Justified, Right Justified, Centered, or Centered as Group. If this element is omitted, the math paragraph is Centered as Group. Whether the element is absent or present without the val attribute, the default of the val attribute is centerGroup. This means that the instances of mathematical text can be aligned with respect to each other, but the entire group of mathematical text is centered as a whole.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the default justification of mathematical text in the document. Possible values are center, centerGroup, left and right. |

#### lim (Limit)

This element specifies the lower limit of the limLow object and the upper limit of the limUpp function.

#### limLoc (n-ary Limit Location)

This element specifies the location of limits in n-ary operators. Limits can be either centered above and below the n-ary operator (shown in the first summation below) or positioned just to the right of the operator (shown in the second summation below).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the default location of limits on the parent object. Possible values are subSup and undOvr. |

#### limLow (Lower-Limit Object)

This element specifies the Lower-Limit object, consisting of text on the baseline and reduced-size text immediately below it.

#### limLowPr (Lower-Limit Properties)

This element specifies control properties (ctrlPr) that can be stored on the Lower Limit (limLow).

#### limUpp (Upper-Limit Object)

This element specifies the Upper-Limit object, consisting of text on the baseline and reduced-size text immediately above it.

#### limUppPr (Upper-Limit Properties)

This element specifies control properties (ctrlPr) that can be stored on the Upper Limit (limUpp).

#### lit (Literal)

This element specifies that the characters in the run are literal; that is, they are to be interpreted literally and not be built up based on any implied mathematical meaning. This is especially useful for operators or other special characters that signal a need for build up to an OMML reader. These characters are often encountered during a given instance of mathematical text when presented in a1-dimensional linear format, such as the linear format defined by Unicode Technical Note #28 (Sargent 2006).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### lMargin (Left Margin)

This element specifies the left margin for math, in twips. If this element is omitted, no left margin is used. In other words, when the element is absent, the default value of the option is 0.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value, in twips, of the parent element. |

#### m (Matrix Object)

This element specifies the Matrix object, consisting of one or more elements laid out in one or more rows and one or more columns. It is important to note that matrices do not have built in delimiters. Like other math elements, matrices are contained in a delimiter object (§22.1.2.24) when delimiters are desired. Empty arguments (see §22.1.2.32) can be used to create gaps in matrices. The plcHide tag (§22.1.2.83) can be used to indicate whether the empty arguments should be visible in the matrix (see the plcHide documentation for more information). If mPr is omitted, the values of baseJc, cGp, cGpRule, cSp, ctrlPr, mcs, plcHide, rSp and rSpRule are shown in the following table:

|  |  |
| --- | --- |
| **Property** | **Default Value** |
| baseJc | “center” |
| cGp | “0” |
| cGpRule | “0” <single> |
| cSp | “0” |
| ctrlPr | <The character property of the first control character shall be the character property of the first character in the m object > |
| mcs | <All columns will be vertically center aligned> |
| plcHide | “0” |
| rSp | “0” |
| rSpRule | “0” <single> |

#### mathFont (Math Font)

This element specifies the default math font to be used in the document. If this element is omitted, font substitution (§17.8.2) should be used to determine the most appropriate font for use throughout the document.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the default math font to be used in the document. |

#### mathPr (Math Properties)

This element specifies the document-level properties for all math in the document.

#### maxDist (Maximum Distribution)

This element specifies Array Maximum Distribution. When 1 or true, the array is spaced to the maximum width of the containing element (page, column, cell, etc.). The example image below illustrates an array expanded to fit the page, which is the containing element in this example. The maxDist option is commonly used with the objDist option. The objDist option is used to expand the distribution of mathematical text within the bounds of an array while not impacting the Array Distribution itself.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### mc (Matrix Column)

This element specifies a single column in a matrix m.

#### mcJc (Matrix Column Justification)

This element specifies the justification of a matrix column (or group of matrix columns)mc. When this element is omitted, the column is centered. Whether the element is absent or present without the val attribute, the default of the val attribute is center. The matrix below has three columns. The leftmost column is left-justified, the rightmost column is right-justified, and the center column is centered:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the horizontal alignment of the parent element. Possible values are left, right and center. |

#### mcPr (Matrix Column Properties)

This element specifies the properties of the matrix column mn, including the number of columns and the type of justification.

#### mcs (Matrix Columns)

This element specifies the collection of columns of the matrix m.

#### mPr (Matrix Properties)

This element specifies properties of the matrix m, including the justification of the matrix and the layout of elements within the matrix.

#### mr (Matrix Row)

This element specifies a single row of the matrix m.

#### nary (n-ary Operator Object)

This element specifies an n-ary object, consisting of an n-ary object, a base (or operand) and optional upper and lower limits.

#### naryLim (n-ary Limit Location)

This element specifies the document setting for the default placement of n-ary limits other than integrals (since integrals are most often written as subSup and other n-ary operators are most often written as undOvr), when converted from a built down form to a two-dimensional output (professional form). Limits can be either centered above and below the n-ary operator, or positioned just to the right of the operator, as in:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the default location of limits on the parent object. Possible values are subSup and undOvr. |

#### naryPr (n-ary Properties)

This element specifies the properties of the n-ary object.

#### noBreak (No Break)

This property specifies the "unbreakable" property on the Box object box. When 1 or true, no line breaks can occur within the box. This can be important for operator emulators that consist of more than one binary operator. When this element is not specified, breaks can occur inside box. Whether the element is absent or present without the val attribute, the default of the val attribute is 1 meaning that this property is applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### nor (Normal Text)

This element specifies that the run is normal text, i.e., math italics and math spacing are not applied. In a normal text run, no characters will trigger reformatting of a linear expression into a two-dimensional expression.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### num (Numerator)

This element specifies the numerator of the Fraction object f.

#### objDist (Object Distribution)

This element specifies Array Object Distribution. When 1 or true, the contents of the array are spaced to the maximum width of the array object. When this element is omitted, the array does not receive object distribution. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### oMath (Office Math)

This element specifies an instance of mathematical text. When used independently (not inside an oMathPara) with non-mathematical text preceding and/or following it, an independent oMath is interpreted as an inline math zone. All such math zones, including equations, expressions, arrays of equations or expressions and formulas are represented by oMath blocks. When used in a display math zone (a math paragraph, oMathPara), oMath is a container for an instance of mathematical text that starts on its own line and is not an inline math zone. When an oMath block is part of a display math zone, it is not itself an inline math zone. When an oMath block is not part of a display math zone, it is interpreted as its own inline math zone. The contents of an oMath block do not differ between display zone containers and independent inline math zones.

#### oMathPara (Office Math Paragraph)

This element specifies a math paragraph, or display math zone, that contains one or more oMath elements that are in display mode. The oMath containers of a display math zone are not themselves considered inline math zones.

#### oMathParaPr (Office Math Paragraph Properties)

This property specifies properties of the math paragraph oMathPara, including justification jc.

#### opEmu (Operator Emulator)

This element specifies the Operator Emulator property on box. When 1 or true, the box and its contents behave as a single operator and inherit the properties of an operator. This means, for example, that the character can serve as a point for a line break and can be aligned to other operators. (For more details on the properties of an operator, see Unicode Technical Report #25, §3.2.2 and §3.2.3 and Unicode Technical Note #28.) Operator Emulators are often used when one or more glyphs combine to form an operator, such as==.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### phant (Phantom Object)

This element specifies the phantom object. This object has two primary uses: adding the spacing of the phantom base element e without displaying that base; and suppressing part of the glyph for spacing considerations.

|  |  |
| --- | --- |
| Without <m:phant> | With <m:phant> |
| <m:rad> | <m:rad> |

#### phantPr (Phantom Properties)

This element specifies properties of the Phantom object, including whether the phantom is hidden or visible and the amount of space that is considered when laying out text and objects around phantoms.

#### plcHide (Hide Placeholders (Matrix))

This element specifies the Hide Placeholders property on a matrix m. When this property is on, placeholders do not appear in the matrix. If this element is omitted, placeholders do appear such that the locations where text can be inserted are made visible. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### pos (Position)

This element specifies the position of the bar or group character in the parent object; the default is bot.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the position of the parent element. Possible values are top and bot. |

#### postSp (Post-Paragraph Spacing)

This element specifies the spacing after a math paragraph, in twips. If this element is omitted, no spacing is applied after the paragraph.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value, in twips, of the parent element. |

#### preSp (Pre-Paragraph Spacing)

This element specifies the spacing before a math paragraph, in twips. If this element is omitted, no spacing is applied before the paragraph.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value, in twips, of the parent element. |

#### r (Run)

This element specifies a run of mathematical text.

#### rad (Radical Object)

This element specifies the radical object, consisting of a radical, a base e and an optional degree deg. :

#### radPr (Radical Properties)

This element specifies properties of the Radical object rad, including the hidden or shown state of the degree deg.

#### rMargin (Right Margin)

This element specifies the right margin for math, in twips. If this element is omitted, no right margin is used. In other words, when the element is absent, the default value of the option is 0. When the element is present and the val attribute is absent, the default of the val attribute is 1440 (or 1 inch).Math margins are added to the paragraph settings for margins. If the sum of lMargin and rMargin exceed the width available, lMargin should be ignored. If rMargin exceeds the width available, a default indent of 1440 twips should be used. :

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value, in twips, of the parent element. |

#### rPr (Run Properties)

This element specifies the properties of the math run r.

#### rSp (Row Spacing (Array))

This element specifies spacing between rows of an array eqArr; it is used only when rSpRule is set to 3 (exactly; in which case the unit of measure is points) or 4 (Multiple; in which case the unit of measure is half-lines). If this element is omitted, single line spacing is used in the array and no additional spacing is used in the layout of rows. Whether the element is absent or present without the val attribute, the default of the val attribute is 0.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the amount of space between columns of the parent element (for cGp/cSp) or rows (for rSp). The manner in which this value is determined depends on the setting of the rule of the parent element. |

#### rSpRule (Row Spacing Rule)

This element specifies the type of vertical spacing between columns in a matrix. The following table demonstrates possible values of rSpRule along with their definitions and examples.

|  |  |
| --- | --- |
| **Value** | **Line spacing between rows** |
| 0 | Single line gap |
| 1 | 1.5-line gap |
| 2 | 2-line gap |
| 3 | Exactly (rely on value of rGp, measured in points) |
| 4 | Multiple (rely on value of rGp, measured in lines) |

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the type of spacing between rows and/or columns. Possible values are 0, 1, 2, 3, or 4, whose definitions are contained in the following table: |

#### scr (Script)

This element describes the script applied to the characters in the run. The XML includes the Unicode value of the character (between U+0000 and U+007F), along with the script of the character. The application maps the value and script type to the appropriate Unicode range.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the script type of the parent element. Possible values are double-struck, fraktur, monospace, roman, sans-serif and script. |

#### sepChr (Delimiter Separator Character)

This element specifies the character that separates base arguments e in the delimiter object d. If this element is omitted, the default sepChr is '|'. In other words, when the element is absent, the default is for the delimiter object separator character to be U+2502 (BOX DRAWINGS LIGHT VERTICAL).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the character used by the parent element. When it is omitted, the parent uses its assigned default. |

#### show (Phantom Show)

This element specifies the show property of the phantom phant. When 0 or false, the phant base e is hidden. If this element is omitted, the base e is shown. Whether the element is absent or present without the val attribute, the default of the val attribute is 1 meaning that this property is applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### shp (Shape (Delimiters))

This element specifies the shape of delimiters in the delimiter object d. Delimiters can be centered around the math axis of the mathematical text and still be made to fit the entire height of their contents (see right-hand example below), or their height and shape can be altered to exactly match their contents (see left-hand example below). These settings significantly impact the shape of the mathematical text. When this element is omitted, delimiters are 'centered'. Whether the element is absent or present without the val attribute, the default of the val attribute is centered.: In the examples below, delimiters will be matched to the exact shape of their contents on the left and will be centered on the right:

|  |  |
| --- | --- |
| Match | Centered |
| <m:dPr> | <m:dPr> |

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the shape of the parent element. Possible values are match and centered. |

#### smallFrac (Small Fraction)

This element specifies a reduced fraction size display math, such that the numerator and denominator are written in script size instead of at the size of regular text.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### sPre (Pre-Sub-Superscript Object)

This element specifies the Pre-Sub-Superscript object, which consists of a base e and a subscript and superscript placed to the left of the base, as in .

#### sPrePr (Pre-Sub-Superscript Properties)

This element specifies properties such as ctrlPr that can be stored on the Pre-Sub-Superscript objects Pre.

#### sSub (Subscript Object)

This element specifies the subscript object sSub, which consists of a base e and a reduced-size scr placed below and to the right, as in .

#### sSubPr (Subscript Properties)

This element specifies properties such as ctrlPr that can be stored on the Subscript object sSub.

#### sSubSup (Sub-Superscript Object)

This element specifies the sub-superscript object, which consists of a base e, a reduced-size scr placed below and to the right and a reduced-size scr placed above and to the right, as in .

#### sSubSupPr (Sub-Superscript Properties)

This element specifies properties of the Sub-Superscript object, including the alignment of scripts.

#### sSup (Superscript Object)

This element specifies the superscript object sSup, which consists of a base e and a reduced-size scr placed above and to the right, as in .

#### sSupPr (Superscript Properties)

This element specifies properties such as ctrlPr that can be stored on the Superscript object sSup.

#### strikeBLTR (Border Box Strikethrough Bottom-Left to Top-Right)

This element specifies the hidden or shown state of a strikethrough diagonal line from the bottom-left corner to the top-right corner of borderBox. When this element is omitted, the strikethrough is not drawn. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied. When the element is present and the val attribute is absent, the default of the val attribute is 1 meaning that this property is applied. When applied, a strikethrough is drawn, as in .

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### strikeH (Border Box Strikethrough Horizontal)

This element specifies the hidden or shown state of a strikethrough horizontal line in borderBox. When this element is omitted, the strikethrough is not drawn. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied. When the element is present and the val attribute is absent, the default of the val attribute is 1 meaning that this property is applied. When on, a horizontal strikethrough is drawn, as in .

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### strikeTLBR (Border Box Strikethrough Top-Left to Bottom-Right)

This element specifies the hidden or shown state of a strikethrough diagonal line from the top-left corner to the bottom-right corner of borderBox. When this element is omitted, the strikethrough is not drawn. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied. When the element is present and the val attribute is absent, the default of the val attribute is 1 meaning that this property is applied. When applied, a strikethrough is drawn, as in .

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### strikeV (Border Box Strikethrough Vertical)

This element specifies the hidden or shown state of a strikethrough vertical line in borderBox. When this element is omitted, the strikethrough is not drawn. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied. When the element is present and the val attribute is absent, the default of the val attribute is 1 meaning that this property is applied. When applied, a strikethrough is drawn, as in .

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### sty (style)

This element describes the script applied to the characters in the run. The XML includes the Unicode value of the character along with the style of the character. The application maps the value and style to the appropriate Unicode range. Whether the element is absent or present without the val attribute, the default of the val attribute is i.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the style of the parent element. Possible values are b(bold), i(italic), bi(bolditalic) and p(plain). |

#### sub (Subscript (Pre-Sub-Superscript))

This element specifies the subscript of the Pre-Sub-Superscript object sPre. : For example, the sub in the object is 1. An example of this element in use is:

#### subHide (Hide Subscript (n-ary))

This element specifies the n-ary Hide Subscript property. When 1 or true, the lower limit does not appear, as in . If this element is omitted, the lower limit appears.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### sup (Superscript (Superscript object))

This element specifies the superscript of the superscript object sSup. For example, the sup in the superscript object is 𝑛.

#### supHide (Hide Superscript (n-ary))

This element specifies the n-ary Hide Superscript property. When 1 or true, the upper limit does not appear, as in . If this element is omitted, the upper limit appears.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### t (Text)

This element specifies the text in a math run r.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| xml:space(Content | Specifies how white space should be handled for the contents of this element using the W3C space preservation rules. : Consider the following run contained within a WordprocessingML document: |

#### transp (Transparent (Phantom))

This element specifies that the phantom is transparent for spacing. This means that if the contents of the phantom are belonging to a special spacing class (such as binary operators, relational operators, differentials, etc.), the contents of that phantom are taken into consideration when laying out text. If transparency is turned off, then the contents of the phantom are ignored during layout. When this element is omitted, transparency is 0 or false. In other words, when the element is absent, the default value of the property is 0 meaning that this property is not applied.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### type (Fraction type)

This element specifies the type of fraction f; the default is 'bar'. Whether the element is absent or present without the val attribute, the default of the val attribute is bar. Fraction types are:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the type of fraction. Possible values are bar(Bar Fraction), lin(Linear Fraction), noBar(No-Bar Fraction (Stack)) and skw(Skewed). |

#### vertJc (Vertical Justification)

This element, combined with pos of groupChrPr, specifies the vertical layout of the groupChr object. Where pos specifies the position of the grouping character, vertJc specifies the alignment of the object with respect to the baseline. For example, when the group character is above the object, vertJc of top signifies that the top of the object falls on the baseline; when vertJc is set to bot, the bottom of the object is on the baseline. The table below demonstrates the four possible combinations of groupChr layout:

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the position of the parent element. Possible values are top and bot. |

#### wrapIndent (Wrap Indent)

This element specifies the indent of the wrapped line of an instance of mathematical text. The line or lines of a wrapped instance of mathematical text after the line break can either be indented by a specified amount from the left margin, or right aligned. The default indent is 1". In other words, whether the element is absent or present without the val attribute, the default of the val attribute is 1440 twips (or 1 inch).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies the value, in twips, of the parent element. |

#### wrapRight (Wrap Right)

This element specifies the right justification of the wrapped line of an instance of mathematical text. The line or lines of a wrapped instance of mathematical text after the line break can either be indented by a specified amount from the left margin, or right aligned. If this element is present, the continuation is right aligned.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### zeroAsc (Phantom Zero Ascent)

This element specifies that the phantom has zero ascent. The ascent of the contents of the phantom is not considered during layout. When this property is omitted, the phantom does have ascent (zero ascent is not applied).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### zeroDesc (Phantom Zero Descent)

This element specifies that the phantom has zero descent. The descent of the contents of the phantom is not considered during layout. When this property is omitted, the phantom does have descent (zero descent is not applied).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

#### zeroWid (Phantom Zero Width)

This element specifies that the phantom has zero width. The width of the contents of the phantom is not considered during layout. When this property is omitted, the phantom does have width (zero width is not applied).

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| val (Value) | Specifies a binary value for the property defined by the parent XML element. |

### Simple Types

This is the complete list of simple types dedicated to Math.

#### ST\_BreakBin (Break Binary Operators)

This defines how to represent binary operators with respect to a line-wrapping break. The line can wrap before the operator or after the operator; alternately, the operator can appear both at the end of the first line and the beginning of the second.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| after(After) | When line-wrapping breaks occur on binary operators, the binary operator appears after the break (at the start of the next line). |
| before(Before) | When line-wrapping breaks occur on binary operators, the binary operator appears before the break (at the end of the first line). |
| repeat(Repeat) | When line-wrapping breaks occur on binary operators, the binary operator appears on both sides of the break (at the end of the first line and the start of the next line). |

#### ST\_BreakBinSub (Break on Binary Subtraction)

This simple type specifies how to represent subtraction on both sides of a line-wrapping break, when the Break Binary Operators option is set to repeat. The first character represents the sign at the end of the line with the break; the second represents the sign at the start of the wrapped line. Options are --, -+ and +-.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| +-(Plus Minus) | Repetition of subtraction sign after a line-wrapping break is plus on the first line and minus on the second line. |
| -+(Minus Plus) | Repetition of subtraction sign after a line-wrapping break is minus on the first line and plus on the second line. |
| --(Minus Minus) | Repetition of subtraction sign after a line-wrapping break is minus on the first and second lines. |

#### ST\_Char (Character)

This Simple Type specifies the single character used by the parent element.

#### ST\_FType (Fraction Type)

Fractions can be of type bar (horizontal fraction bar), skewed ("skw" - diagonal fraction bar with kerned and vertically adjusted numerator and denominator), linear ("lin" - diagonal fraction bar, takes up exactly one line of space) and the "stack" object ("noBar").

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bar(Bar Fraction) | Fraction with a horizontal fraction bar. |
| lin(Linear Fraction) | Fraction with slanted fraction bar, that takes up no additional vertical space. |
| noBar(No-Bar Fraction (Stack)) | Stack object, which looks like a fraction with no fraction bar. |
| skw(Skewed) | Fraction with diagonal fraction bar. |

#### ST\_Integer2 (Integer value (-2 to 2))

This simple type contains a value from (-2,+2) which specifies the size of the argument. The effects of each value are described by the referencing element.

#### ST\_Integer255 (Integer value (1 to 255))

This simple type specifies an integer value. The semantics of each value are discussed by the referencing element.

#### ST\_Jc (Justification)

This Simple Type specifies the justification of Math Paragraphs. Justification of the Math Paragraph can be Left, Right, Centered, or Centered as Group.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| center(Center (Text)) | Centers each instance of mathematical text individually with respect to margins. |
| centerGroup(Centered as Group (Text)) | Justifies instances of mathematical text with respect to each other and centers the group of mathematical text (the Math Paragraph) with respect to the page. |
| left(Left Justification) | Left justification of Math Paragraph |
| right(Right) | Right Justification of Math Paragraph |

#### ST\_LimLoc (Limit Location)

Limits can be in one of two positions: Under-Over (undOvr- above and below the base) and SubscriptSuperscript (subSup- positioned to the side of the base, in the position of subscripts and superscripts).

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| subSup(Subscript-Superscript location) | Limits placed to the side of the base, as opposed to directly over and under. |
| undOvr(Under-Over location) | Limits placed to the directly above and below the base, as opposed to on the side. |

#### ST\_Script (Script)

Script can be of type Roman, Script, Fraktur, Double-Struck, Sans-Serif, or Monospace.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| double-struck(double-struck) | Double-Struck Script Type |
| fraktur(Fraktur) | Fraktur Script Type |
| monospace(Monospace) | Monospace Script Type |
| roman(Roman) | Roman Script Type |
| sans-serif(Sans-Serif) | Sans-Serif Script Type |
| script(Script) | Script Type |

#### ST\_Shp (Shape (Delimiters))

Delimiters shape can be centered around the argument or matched to the shape of the argument.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| centered(Centered (Delimiters)) | Delimiters are centered around their argument. |
| match(Match) | Match shape of contents of delimiters. |

#### ST\_SpacingRule (Spacing Rule)

Integer value (0 to 4), representing the type of spacing between rows.

#### ST\_Style (Style)

Style of math can be plain, bold, italic, or bold-italic (p, bi, i, or bi).

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| b(Bold) | Bold |
| bi(Bold-Italic) | Bold-Italic |
| i(Italic) | Italic |
| p(Plain) | Plain |

#### ST\_TopBot (Top-Bottom)

Possible values are top and bot.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bot(Bottom Alignment) | Aligns the bottom of the object to the baseline of the surrounding text. |
| top(Top) | Aligns the top row of the object to the baseline of the surrounding text. |

#### ST\_UnSignedInteger (Unsigned integer)

This simple type's contents are a restriction of the W3C XML Schema unsignedInt datatype.

## Extended Properties

Extended properties are a predefined set of metadata properties that are applicable to Office Open XML documents. These properties extend the set of core properties defined in Part 2: "Open Packaging Conventions" which are common to all packages.

### Elements

The following elements specify the contents of this namespace:

#### Application (Application Name)

This element specifies the name of the application that created this document.

#### AppVersion (Application Version)

This element specifies the version of the application which produced this document.

#### Characters (Total Number of Characters)

This element specifies the total number of characters in a document.

#### CharactersWithSpaces (Number of Characters (With Spaces))

This element specifies the last count of the number of characters (including spaces) in this document.

#### Company (Name of Company)

This element specifies the name of a company associated with the document.

#### DigSig (Digital Signature)

This element contains the signature of a digitally signed document.

#### DocSecurity (Document Security)

This metadata element specifies the security level of a document as a numeric value. Document security is defined as:

|  |  |
| --- | --- |
| DocSecurity | **Security Level** |
| 1 | Document is password protected. |
| 2 | Document is recommended to be opened as read-only. |
| 4 | Document is enforced to be opened as read-only. |
| 8 | Document is locked for annotation. |

#### HeadingPairs (Heading Pairs)

Heading pairs indicates the grouping of document parts and the number of parts in each group. These parts are not document parts but conceptual representations of document sections.

#### HiddenSlides (Number of Hidden Slides)

This element specifies the number of hidden slides in a presentation document.

#### HLinks (Hyperlink List)

This element specifies the set of hyperlinks that were in this document when last saved.

#### HyperlinkBase (Relative Hyperlink Base)

This element specifies the base string used for evaluating relative hyperlinks in this document.

#### HyperlinksChanged (Hyperlinks Changed)

This element specifies that one or more hyperlinks in this part were updated exclusively in this part by a producer. The next producer to open this document shall update the hyperlink relationships with the new hyperlinks specified in this part.

#### Lines (Number of Lines)

This element specifies the total number of lines in a document when last saved by a conforming producer if applicable.

#### LinksUpToDate (Links Up-to-Date)

This element indicates whether hyperlinks in a document are up-to-date. Set this element to TRUE to indicate that hyperlinks are updated. Set this element to FALSE to indicate that hyperlinks are outdated.

#### Manager (Name of Manager)

This element specifies the name of a supervisor associated with the document.

#### MMClips (Total Number of Multimedia Clips)

This element specifies the total number of sound or video clips that are present in the document.

#### Notes (Number of Slides Containing Notes)

This element specifies the number of slides in a presentation containing notes.

#### Pages (Total Number of Pages)

This element specifies the total number of pages of a document if applicable.

#### Paragraphs (Total Number of Paragraphs)

This element specifies the total number of paragraphs found in a document if applicable.

#### PresentationFormat (Intended Format of Presentation)

This element specifies the intended format for a presentation document. For example, a presentation intended to be shown on video has PresentationFormat "Video".

#### Properties (Application Specific File Properties)

This element specifies the application properties of a document. For properties of type string, NCR escape format (\_xHHHH\_) is used for any invalid XML characters.

#### ScaleCrop (Thumbnail Display Mode)

This element indicates the display mode of the document thumbnail. Set this element to TRUE to enable scaling of the document thumbnail to the display. Set this element to FALSE to enable cropping of the document thumbnail to show only sections that fits the display.

#### SharedDoc (Shared Document)

This element indicates if this document is currently shared between multiple producers. If this element is set to TRUE, producers should take care when updating the document.

#### Slides (Slides Metadata Element)

This element specifies the total number of slides in a presentation document.

#### Template (Name of Document Template)

This element specifies the name of an external document template containing format and style information used to create the current document.

#### TitlesOfParts (Part Titles)

This element specifies the title of each document. These parts are not document parts but conceptual representations of document sections.

#### TotalTime (Total Edit Time Metadata Element)

Total time that a document has been edited. The default time unit is minutes.

#### Words (Word Count)

This element specifies the total number of words contained in a document when last saved.

## Custom Properties

Custom properties enable users to define custom metadata properties through a set of well-defined data types.

### Elements

This subclause specifies the set of elements that define this namespace:

#### Properties (Custom File Properties)

Parent element for the custom file properties part.

#### property (Custom File Property)

This element specifies a single custom file property. Custom file property type is defined through child elements in the File Properties Variant Type namespace. Custom file property value can be set by setting the appropriate Variant Type child element value.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| fmtid(Format ID) | Uniquely relates a custom property with an OLE property. |
| linkTarget(Bookmark Link Target) | Specifies the name of a bookmark in the current document (for WordprocessingML), or a table or named cell (for SpreadsheetML) from which the value of this custom document property should be extracted. |
| name(Custom File Property Name) | Specifies the name of this custom file property. |
| pid(Property ID) | Uniquely relates a custom property with an OLE property. |

## Variant Types

This subclause specifies the set of data types which can be included within file properties that accept variant type structures.

### Elements

The following elements define the contents of this namespace:

#### array (Array)

The array element defines the array variant type. Array contents shall be of uniform type as specified by the baseType attribute. The contents of an array are defined using repeated child elements of the appropriate variant type.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| baseType(Array Base Type) | The baseType attribute specifies the base variant type of an array. |
| lBounds(Array | The lBounds attribute specifies the lower bound of an array in the format: #, #, # … # where each # represents an integer. |
| uBounds(Array | The uBounds attribute specifies the upper bound of an array in the format: #, #, # … # where each # represents an integer. |

#### blob (Binary Blob)

This element specifies a base64 binary blob variant type.

#### bool (Boolean)

This element specifies a Boolean variant type.

#### bstr (Basic String)

This element defines a binary basic string variant type, which can store any valid Unicode character. Unicode characters that cannot be directly represented in XML as defined by the XML 1.0 specification, shall be escaped using the Unicode numerical character representation escape character format \_xHHHH\_, where H represents a hexadecimal character in the character's value.

#### clsid (Class ID)

This element specifies a class ID variant type. The value shall be a Globally Unique Identifier with format:

#### cy (Currency)

This element specifies a currency variant type with exactly four digits after the decimal point.

#### date (Date and Time)

This element specifies a date variant type of type date-time as defined in RFC 3339.

#### decimal (Decimal)

This element specifies a decimal variant type.

#### empty (Empty)

This element specifies an empty variant type. No values or child elements are allowed.

#### error (Error Status Code)

The error element specifies a 32-bit error status code variant type of the form 0xHHHHHHHH. Each H represents a hexadecimal digit.

#### filetime (File Time)

This element specifies a file-time variant type of type date-time as defined in RFC 3339.

#### i1 (1-Byte Signed Integer)

This element specifies a 1-byte signed integer variant type.

#### i2 (2-Byte Signed Integer)

This element specifies a 2-byte signed integer variant type.

#### i4 (4-Byte Signed Integer)

This element specifies a 4-byte signed integer variant type.

#### i8 (8-Byte Signed Integer)

This element specifies an 8-byte signed integer variant type.

#### int (Integer)

This element specifies an integer variant type.

#### lpstr (LPSTR)

This element specifies a string variant type. For all characters that cannot be represented in XML as defined by the XML 1.0 specification, the characters are escaped using the Unicode numerical character representation escape character format \_xHHHH\_, where H represents a hexadecimal character in the character's value.

#### lpwstr (LPWSTR)

This element specifies a string variant type. For all characters that cannot be represented in XML as defined by the XML 1.0 specification, the characters are escaped using the Unicode numerical character representation escape character format \_xHHHH\_, where H represents a hexadecimal character in the character's value.

#### null (Null)

This element specifies a null variant type.

#### oblob (Binary Blob Object)

This element specifies a base64 binary blob object variant type.

#### ostorage (Binary Storage Object)

This element specifies a base64 binary storage object variant type.

#### ostream (Binary Stream Object)

This element specifies a binary stream object variant type.

#### r4 (4-Byte Real Number)

This element specifies a 4-byte real number variant type.

#### r8 (8-Byte Real Number)

This element specifies an 8-byte real number variant type.

#### storage (Binary Storage)

This element specifies a binary storage variant type.

#### stream (Binary Stream)

This element specifies a binary stream variant type.

#### ui1 (1-Byte Unsigned Integer)

This element specifies a 1-byte unsigned integer variant type.

#### ui2 (2-Byte Unsigned Integer)

This element specifies a 2-byte unsigned integer variant type.

#### ui4 (4-Byte Unsigned Integer)

This element specifies a 4-byte unsigned integer variant type.

#### ui8 (8-Byte Unsigned Integer)

This element specifies an 8-byte unsigned integer variant type.

#### uint (Unsigned Integer)

This element specifies an unsigned integer variant type.

#### variant (Variant)

This element can contain exactly 1 child element of any variant type. This element is only valid as a child element of a vector or array variant type. : A vector of variant types:

#### vector (Vector)

This element defines the vector variant type. Vector contents shall be of uniform type as specified by the baseType attribute. The contents of a vector are defined using repeated child elements of the appropriate variant type.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| baseType(Vector Base Type) | The baseType attribute specifies the base variant type of a vector. |
| size(Vector Size) | Specifies the number of elements in the vector. |

#### vstream (Binary Versioned Stream)

This element specifies a binary versioned stream variant type.

### Simple Types

This is the complete list of simple types dedicated to Variant Types.

#### ST\_ArrayBaseType (Array Base Type Simple Type)

The ST\_ArrayBaseType simple type defines the allowed values for an array's baseType attribute as: variant, i1, i2, i4, int, ui1,ui2, ui4, uint, r4, r8, decimal, bstr, date, bool, cy and error.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bool (Boolean Base Type) | Specifies that the variant type for the contents of an array shall be bool. |
| bstr (Basic String Base Type) | Specifies that the variant type for the contents of an array shall be bstr. |
| cy (Currency Base Type) | Specifies that the variant type for the contents of an array shall be cy. |
| date (Date and Time Base Type) | Specifies that the variant type for the contents of an array shall be date. |
| decimal (Decimal Base Type) | Specifies that the variant type for the contents of an array shall be decimal. |
| error (Error Status Code Base Type) | Specifies that the variant type for the contents of an array shall be error. |
| i1 (1-Byte Signed Integer Base Type) | Specifies that the variant type for the contents of an array shall be i1. |
| i2 (2-Byte Signed Integer Base Type) | Specifies that the variant type for the contents of an array shall be i2. |
| i4 (4-Byte Signed Integer Base Type) | Specifies that the variant type for the contents of an array shall be i4. |
| int (Integer Base Type) | Specifies that the variant type for the contents of an array shall be int. |
| r4 (4-Byte Real Number Base Type) | Specifies that the variant type for the contents of an array shall be r4. |
| r8 (8-Byte Real Number Base Type) | Specifies that the variant type for the contents of an array shall be r8. |
| ui1 (1-Byte Unsigned Integer Base Type) | Specifies that the variant type for the contents of an array shall be ui1. |
| ui2 (2-Byte Unsigned Integer Base Type) | Specifies that the variant type for the contents of an array shall be ui2. |
| ui4 (4-Byte Unsigned Integer Base Type) | Specifies that the variant type for the contents of an array shall be ui4. |
| uint (Unsigned Integer Base Type) | Specifies that the variant type for the contents of an array shall be uint. |
| variant (Variant Base Type) | Specifies that the variant type for the contents of an array shall be variant. |

#### ST\_Cy (Currency Simple Type)

The ST\_Cy simple type defines the cy element as a currency variant type with exactly four digits after the decimal point.

#### ST\_Error (Error Status Code Simple Type)

The ST\_Error simple type defines a 32-bit error status code variant type of the form 0xHHHHHHHH. Each H represents a hexadecimal.

#### ST\_VectorBaseType (Vector Base Type Simple Type)

The ST\_VectorBaseType simple type defines the allowed values for a vector's baseType attribute as: variant, i1, i2, i4, i8, ui1, ui2, ui4, ui8, r4, r8, lpstr, lpwstr, bstr, date, filetime, bool, cy, error and clsid.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| bool (Boolean Base Type) | Specifies that the variant type for the contents of a vector shall be bool. |
| bstr (Basic String Base Type) | Specifies that the variant type for the contents of a vector shall be bstr. |
| clsid (Class ID Base Type) | Specifies that the variant type for the contents of a vector shall be clsid. |
| cy (Currency Base Type) | Specifies that the variant type for the contents of a vector shall be cy. |
| date (Date and Time Base Type) | Specifies that the variant type for the contents of a vector shall be date. |
| error (Error Status Code Base Type) | Specifies that the variant type for the contents of a vector shall be error. |
| filetime (File Time Base Type) | Specifies that the variant type for the contents of a vector shall be filetime. |
| i1 (Vector Base Type Enumeration Value) | Specifies that the variant type for the contents of a vector shall be i1. |
| i2 (2-Byte Signed Integer Base Type) | Specifies that the variant type for the contents of a vector shall be i2. |
| i4 (4-Byte Signed Integer Base Type) | Specifies that the variant type for the contents of a vector shall be i4. |
| i8 (8-Byte Signed Integer Base Type) | Specifies that the variant type for the contents of a vector shall be i8. |
| lpstr (LPSTR Base Type) | Specifies that the variant type for the contents of a vector shall be lpstr. |
| lpwstr (LPWSTR Base Type) | Specifies that the variant type for the contents of a vector shall be lpwstr. |
| r4 (4-Byte Real Number Base Type) | Specifies that the variant type for the contents of a vector shall be r4. |
| r8 (8-Byte Real Number Base Type) | Specifies that the variant type for the contents of a vector shall be r8. |
| ui1 (1-Byte Unsigned Integer Base Type) | Specifies that the variant type for the contents of a vector shall be ui1. |
| ui2 (2-Byte Unsigned Integer Base Type) | Specifies that the variant type for the contents of a vector shall be ui2. |
| ui4 (4-Byte Unsigned Integer Base Type) | Specifies that the variant type for the contents of a vector shall be ui4. |
| ui8 (8-Byte Unsigned Integer Base Type) | Specifies that the variant type for the contents of a vector shall be ui8. |
| variant (Variant Base Type) | Specifies that the variant type for the contents of a vector shall be variant. |

## Custom XML Data Properties

This namespace defines the set of properties that can be associated with one or more custom XML parts within an Office Open XML document. A *custom XML part*is a part within an Office Open XML document, that contains arbitrary custom XML markup not necessarily defined by ECMA-376 and which is kept independent from the presentation-specific markup within the package.

### Elements

The following information describes the elements in this namespace:

#### datastoreItem (Custom XML Data Properties)

This element specifies the properties for a single custom XML part inside of an Office Open XML document. The set of properties specified within this element are attached to the custom XML part that specifies a relationship to this part.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| itemID (Custom XML Data ID) | Specifies a globally unique identifier (GUID) that uniquely identifies a single custom XML part within an Office Open XML document. |

#### schemaRef (Associated XML Schema)

This element specifies a single XML schema that is associated with the custom XML data part. This XML schema is identified using its target namespace and can be located via any means available to an application processing the contents of this file.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| uri (Target | Specifies the target namespace for the XML Schema associated with this schema reference. |

#### schemaRefs (Set of Associated XML Schemas)

This element specifies the set of XML schemas that are associated with the parent custom XML part. Any number of XML schemas can be referenced, and this collection of schemas shall then be used to validate the contents of the corresponding custom XML part. If this element is present, then the set of XML schemas provided within should be used to validate the contents of the corresponding custom XML part (including the explicit presence of no child elements to specify that no custom XML schemas should be used even if one is present).

## Bibliography

Within an Office Open XML document, it is possible to store an arbitrary amount of bibliographic data, the use of which can be determined by the application reading the content. This subclause defines the format and structure of that bibliographic data.

### Elements

The following elements define the contents of the Bibliography schema:

#### AbbreviatedCaseNumber (Abbreviated Case Number)

This element describes the abbreviated form of a case number. Typically, this field is used in the Case source type.

#### AlbumTitle (Album Title)

This element specifies the title of an album. Typically, this field is used in the Sound recording source type. :

#### Artist (Artist)

This element specifies the artist of the source. Typically, this field is used in the Art and Sound Recording source types. :

#### Author (Contributors List)

This element specifies the contributors to the source. :

#### Author (Author)

This element specifies the author of the source. :

|  |  |
| --- | --- |
| Attributes | Description |
| xml:space (Content |  |

#### BookAuthor (Book Author)

This element specifies the author of a book, when the primary author has authored the book section. For example, if person X writes a chapter in a book by person Y, person X is the Author and person Y is the BookAuthor. :

#### BookTitle (Book Title)

This element specifies the title of a book when the source is a book section. In this case, the title of the book section is the primary title. For example, if X is the title of a chapter in a book entitled , X is the Title and Y is the BookTitle. :

#### Broadcaster (Broadcaster)

This element specifies the broadcaster of a source. Typically, this field is used in the Interview source type. :

#### BroadcastTitle (Broadcast Title)

This element specifies the broadcast title of a source. Typically, this field is used in the Interview source type. :

#### CaseNumber (Case Number)

This element specifies the case number of a source. Typically, this field is used in the Case source type. :

#### ChapterNumber (Chapter Number)

This element specifies the number or index of the chapter being referenced. :

#### City (City)

This element specifies the city in which the source was published, printed, or manufactured. :

#### Comments (Comments)

This element specifies any additional comments about the source. The documentation style determines whether the comments appear in the bibliography. :

#### Compiler (Compiler)

This element specifies the person who compiled the information in a source. :

#### Composer (Composer)

This element specifies the composer of a sound recording. :

#### Conductor (Conductor)

This element specifies the conductor of a source. Typically, this field is used in the sound recording source type. :

#### ConferenceName (Conference or Proceedings Name)

This element specifies the title of the proceedings from a conference. :

#### Corporate (Corporate Author)

This element specifies the corporate author, performer, or any field that can be a name. The element is used when an organization, rather than a person, is used. :

#### Counsel (Counsel)

This element specifies the counsel, attorney, or attorneys in a case.

#### CountryRegion (Country or Region)

This element specifies the country or region of a source. :

#### Court (Court)

This element specifies the court in which the case was presented. :

#### Day (Day)

This element specifies the day on which a source was created or published. :

#### DayAccessed (Day Accessed)

This element specifies the day of the month a source was accessed. :

#### Department (Department)

This element specifies the department in which a source originated, or to which a source was submitted. Typically, this field is used in the Report source type, which includes theses and dissertations. :

#### Director (Director)

This element specifies the director of a source. Typically, this field is used in the Film source type. :

#### Distributor (Distributor)

This element specifies the distributor of a source. Typically, this field is used in the Performance and Film source types. :

#### Edition (Editor)

This element specifies the edition of a source. :

#### Editor (Editor)

This element specifies the editor of a source. :

#### First (Person's First, or Given, Name)

This element specifies a person's first name. :

#### Guid (GUID)

This element specifies the GUID of a source. :

#### Institution (Institution)

This element specifies the institution of the source. Typically, this field is used in the Report source type, where it signifies the university or institute and in the Art source type, where it signifies the museum or institution where the art is housed. :

#### InternetSiteTitle (Internet Site Title)

This element specifies the title of an internet site. Typically, this field is used in the Internet Site and Document from Internet Site source types. :

#### Interviewee (Interviewee)

This element specifies the person being interviewed. Typically, this field is used in the Interview source type. :

#### Interviewer (Interviewer)

This element specifies the person conducting an interview. Typically, this field is used in the Interview source type. :

#### Inventor (Inventor)

This element specifies the inventor of a source. Typically, this field is used in the Patent source type. :

#### Issue (Issue)

This element specifies the issue of a source. Typically, this field is used in the Journal Article and Article in Periodical source types. :

#### JournalName (Journal Name)

This element specifies the name of the journal. Typically, this field is used in the Journal Article source type. :

#### Last (Person's Last, or Family, Name)

This element specifies a person's last name. :

#### LCID (Locale ID)

This element specifies the locale ID of a source, representing the source's language. The set of locale IDs shall be as specified in §22.9.2.6. :

#### Medium (Medium)

This element specifies the medium on or in which a source was created. Typically, this field is used in the electronic source, sound recording and film source types. :

#### Middle (Person's Middle, or Other, Name)

This element specifies a person's middle name. :

#### Month (Month)

This element specifies the month in which a source was created or published. :

#### MonthAccessed (Month Accessed)

This element specifies the month during which the source was accessed. :

#### NameList (Name List)

This element specifies a list containing one or more names of a type of contributor to a source, such as a list of authors, editors, or translators. :

#### NumberVolumes (Number of Volumes)

This element specifies the number of volumes a source contains. :

#### Pages (Pages)

This element specifies the page range being cited in a source. :

#### PatentNumber (Patent Number)

This element specifies the patent number of a source. Typically, this field is used in the Patent source type. :

#### Performer (Performer)

This element specifies the performer. Typically, this field is used in the sound recording, performance, and film source types. :

#### PeriodicalTitle (Periodical Title)

This element specifies the title of a periodical. :

#### Person (Person)

This element specifies a person who contributed to a source. :

#### ProducerName (Producer Name)

This element specifies the person who produced a source. Typically, this field is used in the Internet site, Doc from internet site, electronic source, sound recording, performance and film source types. :

#### ProductionCompany (Production Company)

This element specifies the company that produced a source. Typically, this field is used in the Internet site,

#### PublicationTitle (Publication Title)

This element specifies the title of the publication that contains the source. Typically, this field is used in the electronic source type. :

#### Publisher (Publisher)

This element specifies the publisher of a source. :

#### RecordingNumber (Recording Number)

This element specifies the recording number of a source. Typically, this field is used in the sound recording source type.

#### RefOrder (Reference Order)

This element specifies the reference order of a source. :

#### Reporter (Reporter)

This element specifies the reporter of a source. Typically, this field is used in the Case source type. :

#### ShortTitle (Short Title)

This element specifies the short title of a source. :

#### Source (Source)

This element specifies the bibliography entry for a source or reference work. :

#### Sources (Sources)

This element specifies the sources in a collection.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| SelectedStyle (Selected Style) | Specifies the filename of a file which can be used to format the bibliographies and citations within this document. |
| StyleName  (Documentation  Style Name) | Specifies the name of the documentation style in which the bibliography and citations are formatted. |
| URI(Uniform  Resource Identifier) | Specifies a URI or unique identifier with which a documentation style is associated; can be used to uniquely identify versions of styles that share a StyleName. |

#### SourceType (Source Type)

This element specifies the type of source being cited.

#### StandardNumber (Standard Number)

This element specifies the standard number, such as ISBN or ISSN, of a source. :

#### StateProvince (State or Province)

This element specifies the state or province in which a source was created or published. :

#### Station (Station)

This element specifies the station on which an interview was broadcasted. Typically, this field is used in the Interview source type. :

#### Tag (Tag)

This element specifies the tag name of a source. :

#### Theater (Theater)

This element specifies the theater in which a source was performed or viewed. Typically, this field is used in the Performer source type. :

#### ThesisType (Thesis Type)

This element specifies the type of report being cited, such as Thesis, Dissertation, or Book Report. Typically, this field is used in the Report source type. :

#### Title (Title)

This element specifies the title of a source. :

#### Translator (Translator)

This element specifies the translator of a source. :

#### Type (Patent Type)

This element specifies the type of patent. Typically, this field is used in the Patent source type.

#### URL (URL)

This element specifies the URL of the source. Typically, this field is used in the Internet Site and Document from Internet Site source types. :

#### Version (Version)

This element specifies the version of the source. Typically, this field is used in the Internet Site and Document from Internet Site source types. :

#### Volume (Volume)

This element specifies the volume of the source. :

#### Writer (Writer)

This element specifies the writer of the source. Typically, this field is used in the Performance and Film source types. :

#### Year (Year)

This element specifies the year in which a source was created or published.

#### YearAccessed (Year Accessed)

This element specifies the month during which the source was accessed. :

### Simple Types

This is the complete list of simple types dedicated to Bibliography.

#### ST\_SourceType (Bibliographic Data Source Types)

This simple type specifies the possible types of sources that can be used within bibliographic data in an Office Open XML document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| Art (Art) | Art |
| ArticleInAPeriodical (Article in a Periodical) | Article in a Periodical |
| Book (Book) | Book |
| BookSection (Book Section) | Book Section |
| Case (Case) | Case |
| ConferenceProceedings (Conference Proceedings) | Conference Proceedings |
| DocumentFromInternetSite (Document from Internet Site) | Document from Internet Site |
| ElectronicSource (Electronic Source) | Electronic Source |
| Film (Film) | Film |
| InternetSite (Internet Site) | Internet Site |
| Interview (Interview) | Interview |
| JournalArticle (Journal Article) | Journal Article |
| Misc (Miscellaneous) | Miscellaneous |
| Patent (Patent) | Patent |
| Performance (Performance) | Performance |
| Report (Reporter) | Report |
| SoundRecording (Sound Recording) | Sound Recording |

## Additional Characteristics

In order to allow producers of Office Open XML to describe specific contextual conditions under which the document was created, additional characteristics can be provided within the Additional Characteristics part using the syntax defined below.

### Elements

The following elements define the contents of the Additional Characteristics schema:

#### additionalCharacteristics (Set of Additional Characteristics)

This element is the root element of the Additional Characteristics part and contains the list of additional characteristics for an Office Open XML document.

#### characteristic (Single Characteristic)

This element specifies a single characteristic. The type of characteristic is defined by the name attribute.

|  |  |
| --- | --- |
| **Attributes** | **Description** |
| name(Name of Characteristic) | Specifies the name of the characteristic. There are no constraints on the value of the name attribute, but each name shall be associated with a specific vocabulary via the vocabulary attribute. |
| relation | Specifies how the contents of the value attribute should be interpreted in the context of this characteristic. | |
| val (Characteristic Value) | Specifies the value of the characteristic. | |
| vocabulary (Characteristic | Specifies a URI defining the characteristic grammar with which the name attribute value shall be interpreted. | |

### Simple Types

This is the complete list of simple types dedicated to Additional Characteristics.

#### ST\_Relation (Characteristic Relationship Types)

This simple type specifies the possible relationships between a characteristic's name and value attributes.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| eq (Equal To) | Equal to. |
| ge (Greater Than or Equal to) | Greater than or equal to. |
| gt (Greater Than) | Greater than. |
| le (Less Than or Equal To) | Less than or equal to. |
| lt (Less Than) | Less than. |

## Office Document Relationships

Within an Office Open XML document, it is necessary to be able to explicitly reference one part within the package from another : A PresentationML Slide needs to be able to explicitly reference each picture within it to know where each one is anchored. End example]

### Simple Types

This is the complete list of simple types dedicated to Office Document Relationships.

#### ST\_RelationshipId (Explicit Relationship ID)

This simple type specifies the relationship ID in a part's relationship item which is the target of an explicit relationship from the parent XML element.

## Shared Simple Types

The following simple types represent common value formats used throughout Office Open XML and have been centralized in order to ensure their usage remains consistent.

### Simple Types

This is the complete list of simple types dedicated to Shared Simple Types.

#### ST\_CalendarType (Calendar Types)

This simple type specifies the possible types of calendars which can be used within the context of an Office Open XML document.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| gregorian (Gregorian) | Specifies that the Gregorian calendar, as defined in ISO 8601, shall be used. This calendar should be localized into the appropriate language. |
| gregorianArabic (Gregorian Arabic Calendar) | Specifies that the Gregorian calendar, as defined in ISO 8601, shall be used. |
| gregorianMeFrench (Gregorian Middle East French Calendar) | Specifies that the Gregorian calendar, as defined in ISO 8601, shall be used. |
| gregorianUs (Gregorian English Calendar) | Specifies that the Gregorian calendar, as defined in ISO 8601, shall be used. |
| gregorianXlitEnglish (Gregorian Transliterated English) | Specifies that the Gregorian calendar, as defined in ISO 8601, shall be used. |
| gregorianXlitFrench (Gregorian Transliterated French) | Specifies that the Gregorian calendar, as defined in ISO 8601, shall be used. |
| hebrew (Hebrew) | Specifies that the Hebrew lunar calendar, as described by the Gauss formula for Passover [Har'El, Zvi] and The Complete Restatement of Oral Law (Mishneh Torah), shall be used. |
| hijri (Hijri) | Specifies that the Hijri lunar calendar, as described by the Kingdom of Saudi Arabia, Ministry of Islamic Affairs, Endowments, Da‘wah and Guidance, shall be used. |
| japan (Japanese Emperor Era) | Specifies that the Japanese Emperor Era calendar, as described by Japanese Industrial Standard JIS X 0301, shall be used. |
| korea (Korean Tangun Era) | Specifies that the Korean Tangun Era calendar, as described by Korean Law Enactment No. 4, shall be used. |
| none (No Calendar Type) | Specifies that no calendar should be used. |
| saka (Saka Era) | Specifies that the Saka Era calendar, as described by the Calendar Reform Committee of India, as part of the Indian Ephemeris and Nautical Almanac, shall be used. |
| taiwan (Taiwan) | Specifies that the Taiwanese calendar, as defined by the Chinese National Standard CNS 7648, shall be used. |
| thai (Thai) | Specifies that the Thai calendar, as defined by the |

#### ST\_ConformanceClass (Document Conformance Class Value)

This simple type specifies the conformance class to which a particular Office Open XML document conforms.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| strict (Office Open XML Strict) | Specifies that the document conforms to Office Open XML Strict. |
| transitional (Office Open XML Transitional) | Specifies that the document conforms to Office Open XML Transitional. |

#### ST\_FixedPercentage (Fixed Percentage Value with Sign)

This simple type specifies that its contents will contain a percentage measurement from -100% up to and including 100%, including a trailing percent sign (U+0025).

#### ST\_Guid (128-Bit GUID)

This simple type specifies that its values shall be a 128-bit globally unique identifier (GUID) value.

#### ST\_HexColorRGB (Hexadecimal Color Value)

This simple type specifies that its contents shall contain a color value in RRGGBB hexadecimal format, specified using six hexadecimal digits. Each of the red, green and blue color values, from 0-255, is encoded as two hexadecimal digits.

#### ST\_Lang (Language Reference)

This simple type specifies that its contents has language, which identifier as defined by RFC 4646/BCP 47.

#### (On/Off Value)

This simple type specifies a set of values for any binary (true or false) property defined in a WordprocessingML document.

#### ST\_Panose (Panose-1 Number)

This simple type specifies a Panose-1 font classification. This value is used as one piece of information to guide selection of a similar alternate font if the desired font is unavailable.

#### ST\_Percentage (Percentage Value with Sign)

This simple type specifies that its contents will contain a percentage measurement, with a trailing percent sign (U+0025).

#### ST\_PositiveFixedPercentage (Positive Fixed Percentage Value with Sign)

This simple type specifies that its contents will contain a positive percentage measurement from 0% to 100% inclusive, including a trailing percent sign (U+0025).

#### ST\_PositivePercentage (Positive Percentage Value with Sign)

This simple type specifies that its contents will contain a positive percentage measurement, including a trailing percent sign (U+0025).

#### ST\_PositiveUniversalMeasure (Positive Universal Measurement)

This simple type specifies that its contents will contain a measurement expressed using one of common measure units. The content of this type is a positive decimal number immediately followed by a unit identifier. Unit identifiers are case sensitive and shall be in lowercase. Conforming applications are not required to preserve units of measure between loading and saving a particular document.

#### ST\_String (String)

This simple type specifies that its contents is a string.

#### ST\_TwipsMeasure (Measurement in Twentieths of a Point)

This simple type specifies that its contents contain wither:

#### ST\_UniversalMeasure (Universal Measurement)

This simple type specifies that its contents will contain measurement expressed using one of common measure units. The content of this type is a decimal number immediately followed by a unit identifier. Unit identifiers are case sensitive and shall be in lowercase. Conforming applications are not required to preserve units of measure between loading and saving a particular document.

|  |  |
| --- | --- |
| **Unit Identifier** | **Definition** |
| cm | As defined in ISO 31. |
| mm | As defined in ISO 31. |
| in | 1 in = 2.54 cm (informative) |
| pt | 1 pt = 1/72 in (informative) |
| pc | 1 pc = 12 pt (informative) |
| pi | 1 pi = 12 pt (informative) |

#### ST\_UnsignedDecimalNumber (Unsigned Decimal Number Value)

This simple type specifies that its contents contain a positive whole decimal number, whose contents are interpreted based on the context of the parent XML element.

#### ST\_VerticalAlignRun (Vertical Positioning Location)

This simple type specifies possible values for the alignment of the contents of this run in relation to the default appearance of the run's text. This allows the text to be repositioned as subscript or superscript without altering the font size of the run properties.

|  |  |
| --- | --- |
| **Enumeration Value** | **Description** |
| baseline(Regular Vertical Positioning) | Specifies that the text in the parent run shall be located at the baseline and presented in the same size as surrounding text. |
| subscript(Subscript) | Specifies that this text should be subscript. |
| superscript(Superscript) | Specifies that this text should be superscript. |

#### ST\_XAlign (Horizontal Alignment Location)

This simple type specifies the set of possible relative horizontal positions for the parent floating object. This relative position is specified relative to the horizontal anchor specified by the parent object.

|  |  |  |  |
| --- | --- | --- | --- |
| **Enumeration Value** | | **Description** | |
| center(Centered Horizontally) | | Specifies that the parent object shall be centered with respect to the anchor settings. | |
| inside(Inside) | | Specifies that the parent object shall be inside of the anchor object. | |
| left(Left Aligned Horizontally) | | Specifies that the parent object shall be left aligned with respect to the anchor settings. | |
| outside(Outside) | | Specifies that the parent object shall be outside of the anchor object. | |
| right(Right Aligned Horizontally) | | Specifies that the parent object shall be right aligned with respect to the anchor settings. | |

#### ST\_Xstring (Escaped String)

String of characters with support for escaped invalid-XML characters.

#### ST\_YAlign (Vertical Alignment Location)

This simple type specifies the set of possible relative vertical positions for the parent floating object. This relative position is specified relative to the vertical anchor specified by the parent object.

|  |  |  |  |
| --- | --- | --- | --- |
| **Enumeration Value** | | **Description** | |
| bottom(Bottom) | | Specifies that the parent object shall be vertically aligned to the bottom edge of the anchor object. | |
| center(Centered Vertically) | | Specifies that the parent object shall be vertically centered with respect to the anchor object. Shall not be used with the baseJc element. | |
| inline(In line With Text) | | Specifies that the parent object shall be vertically aligned in line with the surrounding text (i.e. shall not allow any text wrapping around it when positioned in the document. Shall not be used with the baseJc element. | |
| inside(Inside Anchor Extents) | | Specifies that the parent object shall be vertically aligned to the edge of the anchor object and positioned inside that object. Shall not be used with the baseJc element. | |
| outside(Outside Anchor Extents) | | Specifies that the parent object shall be vertically aligned to the edge of the anchor object and positioned outside that object. Shall not be used with the baseJc element. | |
| top(Top) | | Specifies that the parent object shall be vertically aligned to the top edge of the anchor object . | |

#### ST\_XmlName (XML Name)

This simple type shall contain an XML non-colonized name (NCName).