# z3c.RML Reference

Version 0.5

# Introduction

RML is a XML dialect for generating PDF files. Like HTML produces a page within the browser, RML produces a PDF file. The RML processor uses the ReportLab library to convert the RML text into a full PDF template.

The original version of RML was developed by ReportLab, Inc. as a commercial extension to the free ReportLab library. This original version of RML is still available and supported by ReportLab, Inc. This version of RML, z3c.RML, is a free implementation of the XML dialect based on the available documentation. While it tries to keep some level of compatibility with the original version of RML, it is intended to provde a as clean and feature-rich API as possible.

The contents of this document is auto-generated from the code itself and should thus be very accurate and complete.

# **Attribute Types**

This section list the types of attributes used for the attributes within the RML elements.

# **Boolean**

A boolean value. For true the values "true", "yes", and "1" are allowed. For false, the values "false", "no", "1" are allowed.

# **BooleanWithDefault**

This is a boolean field that can also receive the value "default".

# Choice

A choice of several values. The values are always case-insensitive.

# Color

Requires the input of a color. There are several supported formats. Three values in a row are interpreted as RGB value ranging from 0-255. A string is interpreted as a name to a pre-defined color. The 'CMYK()' wrapper around four values represents a CMYK color specification.

# **Combination**

A combination of several other attribute types.

# **File**

This field will return a file object. The value itself can eith be be a relative or absolute path. Additionally the following syntax is supported: [path.to.python.mpackage]/path/to/file

# **FirstLevelTextNode**

Gets all the text content of an element without traversing into any child-elements.

# **Float**

An flaoting point. A minimum and maximum value can be specified.

# **Image**

Similar to the file File attribute, except that an image is internally expected.

## Integer

An integer. A minimum and maximum value can be specified.

# Measurement

This field represents a length value. The units "in" (inch), "cm", and "mm" are allowed. If no units are specified, the value is given in points/pixels.

# **PageSize**

A simple measurement pair that specifies the page size. Optionally you can also specify a the name of a page size, such as A4, letter, or legal.

# **RawXMLContent**

Retrieve the raw content of an element. Only some special element substitution will be made.

# Sequence

A list of values of a specified type.

# String

A simple Bytes string.

# **StringOrInt**

A (bytes) string or an integer.

# **Style**

Requires a valid style to be entered. Whether the style is a paragraph, table or box style is irrelevant, except that it has to fit the tag.

# **Symbol**

This attribute should contain the text representation of a symbol to be used.

# **Text**

A simple unicode string.

# **TextNode**

Return the text content of an element.

# **TextNodeGrid**

A grid/matrix of values retrieved from the element's content. The number of columns is specified for every case, but the number of rows is dynamic.

# **TextNodeSequence**

A sequence of values retrieved from the element's content.

# **XMLContent**

Same as 'RawXMLContent', except that the whitespace is normalized.

# **Directives**

# alias

Defines an alias for a given style.

# Attributes

id (required) - StringId: The id as which the style will be known.

value (required) - Style

Value: The style that is represented.

# bar

Define the look of a bar.

## Attributes

strokeColor - Color

Stroke Color: The color in which the bar border is drawn.

strokeWidth - Measurement

Stroke Width: The width of the bar border line.

fillColor - Color

Fill Color: The color with which the bar is filled.

# barChart

# Attributes

dx - Measurement

dy - Measurement

dwidth - Measurement

dheight - Measurement

angle - Float

**x** - Measurement

y - Measurement

width - Measurement

height - Measurement

strokeColor - Color

strokeWidth - Measurement

fillColor - Color

debug - Boolean

**direction** - Choice of ('horizontal', 'vertical')

useAbsolute - Boolean

barWidth - Measurement

groupSpacing - Measurement

barSpacing - Measurement

# Sub-Directives

data (One)

```
bars (ZeroOrOne)
texts (ZeroOrOne)
```

fillColor - Color

Fill Color: The color of the filled shapes in the area.

# barChart3D

```
Attributes
   dx - Measurement
   dy - Measurement
   dwidth - Measurement
   dheight - Measurement
   angle - Float
   x - Measurement
   y - Measurement
   width - Measurement
   height - Measurement
   strokeColor - Color
   strokeWidth - Measurement
   fillColor - Color
   debug - Boolean
   direction - Choice of ('horizontal', 'vertical')
   useAbsolute - Boolean
   barWidth - Measurement
   groupSpacing - Measurement
   barSpacing - Measurement
   theta_x - Float
   theta_y - Float
   zDepth - Measurement
   zSpace - Measurement
barCode
A barcode graphic.
Attributes
   code (required) - Choice of ('ean13', 'extended39', 'standard39', 'ean8', 'extended93', 'codabar', 'msi',
   'postnet', 'fim', 'code11', 'standard93', 'i2of5', 'code128')
     Code: The name of the type of code to use.
   value (required) - TextNode
     Value: The value represented by the code.
   width - Measurement
     Width: The width of the barcode.
   height - Measurement
     Height: The height of the barcode.
   strokeColor - Color
     Stroke Color: The color of the line strokes in the area.
   strokeWidth - Measurement
     Stroke Width: The width of the line strokes in the area.
```

#### barStrokeColor - Color

Bar Stroke Color: The color of the line strokes in the barcode.

#### barStrokeWidth - Measurement

Bar Stroke Width: The width of the line strokes in the barcode.

#### barFillColor - Color

*Bar Fill Color*: The color of the filled shapes in the barcode.

#### gap - Measurement

*Gap*: The width of the inter-character gaps.

## **barWidth** - Measurement

Bar Width: The width of the smallest bar within the barcode

## barHeight - Measurement

Bar Height: The height of the symbol.

## ratio - Float

*Ratio*: The ratio of wide elements to narrow elements. Must be between 2.0 and 3.0 (or 2.2 and 3.0 if the barWidth is greater than 20 mils (.02 inch)).

## checksum - Integer

Ratio: A flag that enables the computation and inclusion of the check digit.

#### bearers - Float

*Bearers*: Height of bearer bars (horizontal bars along the top and bottom of the barcode). Default is 3 x-dimensions. Set to zero for no bearer bars.(Bearer bars help detect misscans, so it is suggested to leave them on).

## quiet - Boolean

Quiet Zone: A flag to include quiet zones in the symbol.

## **lquiet** - Measurement

*Left Quiet Zone*: Quiet zone size to the left of code, if quiet is true. Default is the greater of .25 inch or .15 times the symbol's length.

# rquiet - Measurement

Right Quiet Zone: Quiet zone size to the right of code, if quiet is true. Default is the greater of .25 inch or .15 times the symbol's length.

# frontName - String

Font Name: The font used to print the value.

## frontSize - Measurement

Font Size: The size of the value text.

## humanReadable - Boolean

Human Readable: A flag when set causes the value to be printed below the bar code.

#### stop - Boolean

Show Start/Stop: A flag to specify whether the start/stop symbols are to be shown.

## **spaceWidth** - Measurement

Space Width: The space of the inter-character gaps.

# **shortHeight** - Measurement

Short Height: The height of the short bar.

## textColor - Color

Text Color: The color of human readable text.

## x - Measurement

*X-Position*: The x-position of the lower-left corner of the barcode.

#### y - Measurement

*Y-Position*: The y-position of the lower-left corner of the barcode.

# barCodeFlowable

Creates a bar code as a flowable.

## Attributes

code (required) - Choice of ('ean13', 'extended39', 'standard39', 'ean8', 'extended93', 'codabar', 'msi', 'postnet', 'fim', 'code11', 'standard93', 'i2of5', 'code128')

Code: The name of the type of code to use.

#### width - Measurement

Width: The width of the barcode.

#### **height** - Measurement

Height: The height of the barcode.

### strokeColor - Color

Stroke Color: The color of the line strokes in the area.

## strokeWidth - Measurement

Stroke Width: The width of the line strokes in the area.

#### fillColor - Color

Fill Color: The color of the filled shapes in the area.

#### barStrokeColor - Color

Bar Stroke Color: The color of the line strokes in the barcode.

## barStrokeWidth - Measurement

Bar Stroke Width: The width of the line strokes in the barcode.

#### barFillColor - Color

Bar Fill Color: The color of the filled shapes in the barcode.

#### gap - Measurement

*Gap*: The width of the inter-character gaps.

## barWidth - Measurement

Bar Width: The width of the smallest bar within the barcode

## **barHeight** - Measurement

Bar Height: The height of the symbol.

#### ratio - Float

*Ratio*: The ratio of wide elements to narrow elements. Must be between 2.0 and 3.0 (or 2.2 and 3.0 if the barWidth is greater than 20 mils (.02 inch)).

# checksum - Integer

Ratio: A flag that enables the computation and inclusion of the check digit.

#### bearers - Float

*Bearers*: Height of bearer bars (horizontal bars along the top and bottom of the barcode). Default is 3 x-dimensions. Set to zero for no bearer bars.(Bearer bars help detect misscans, so it is suggested to leave them on).

## quiet - Boolean

Quiet Zone: A flag to include quiet zones in the symbol.

#### **lquiet** - Measurement

*Left Quiet Zone*: Quiet zone size to the left of code, if quiet is true. Default is the greater of .25 inch or .15 times the symbol's length.

# rquiet - Measurement

*Right Quiet Zone*: Quiet zone size to the right of code, if quiet is true. Default is the greater of .25 inch or .15 times the symbol's length.

## **frontName** - String

Font Name: The font used to print the value.

## **frontSize** - Measurement

Font Size: The size of the value text.

# humanReadable - Boolean

Human Readable: A flag when set causes the value to be printed below the bar code.

# stop - Boolean

Show Start/Stop: A flag to specify whether the start/stop symbols are to be shown.

# spaceWidth - Measurement

Space Width: The space of the inter-character gaps.

shortHeight - Measurement

Short Height: The height of the short bar.

textColor - Color

Text Color: The color of human readable text.

**value** (required) - String

Value: The value represented by the code.

## bars

Collection of bar subscriptions.

# Attributes

strokeColor - Color

Stroke Color: The color in which the bar border is drawn.

strokeWidth - Measurement

Stroke Width: The width of the bar border line.

fillColor - Color

Fill Color: The color with which the bar is filled.

# Sub-Directives

bar (ZeroOrMore)

# blockAlignment

Set the text alignment.

# Attributes

start (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

value (required) - Choice of ('decimal', 'right', 'center', 'centre', 'left')

Text Alignment: The text alignment within the cell.

# blockBackground

Define the background color of the cells. It also supports alternating colors.

## Attributes

start (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

colorName - Color

Color Name: The color to use as the background for every cell.

colorsByRow - Sequence of Color

Colors By Row: A list of colors to be used circularly for rows.

colorsByCol - Sequence of Color

Colors By Column: A list of colors to be used circularly for columns.

# blockBottomPadding

Set the bottom padding of the cells.

## Attributes

start (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

**length** (*required*) - Measurement *Length*: The size of the padding.

# blockColBackground

Define the background colors for columns.

## Attributes

**start** (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

colorNames (required) - Sequence of Color

Colors By Row: A list of colors to be used circularly for rows.

# blockFont

Set the font properties for the texts.

# Attributes

start (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

name - String

Font Name: The name of the font for the cell.

size - Measurement

Font Size: The font size for the text of the cell.

leading - Measurement

Leading: The height of a single text line. It includes character height.

# blockLeading

Set the text leading.

# Attributes

**start** (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

length (required) - Measurement

Length: The height of a single text line. It includes character height.

# blockLeftPadding

Set the left padding of the cells.

## Attributes

start (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

**length** (required) - Measurement

Length: The size of the padding.

# blockRightPadding

Set the right padding of the cells.

## Attributes

**start** (*required*) - Sequence of Combination
Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

**length** (required) - Measurement Length: The size of the padding.

# blockRowBackground

Define the background colors for rows.

## Attributes

start (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

colorNames (required) - Sequence of Color

Colors By Row: A list of colors to be used circularly for rows.

# blockSpan

Define a span over multiple cells (rows and columns).

## Attributes

start (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

# blockTable

A typical block table.

# Attributes

style - Style

*Style*: The table style that is applied to the table.

rowHeights - Sequence of Measurement

Row Heights: A list of row heights in the table.

colWidths - Sequence of Measurement

Column Widths: A list of column widths in the table.

repeatRows - Integer

Repeat Rows: A flag to repeat rows upon table splits.

# Sub-Directives

tr (ZeroOrMore)

**bulkData** (ZeroOrOne)

blockTableStyle (ZeroOrMore)

# blockTableStyle

A style defining the look of a table.

# Attributes

**id** (required) - String

*Id*: The name/id of the style.

# keepWithNext - Boolean

Keep with Next: When set, this paragraph will always be in the same frame as the following flowable.

# Sub-Directives

 ${\bf blockFont}~(ZeroOrMore)$ 

blockLeading (ZeroOrMore)

blockTextColor (ZeroOrMore)

**blockAlignment** (ZeroOrMore)

blockLeftPadding (ZeroOrMore)

blockRightPadding (ZeroOrMore)

blockBottomPadding (ZeroOrMore)

blockTopPadding (ZeroOrMore)

blockBackground (ZeroOrMore)

blockRowBackground (ZeroOrMore)

blockColBackground (ZeroOrMore)

blockValign (ZeroOrMore)

blockSpan (ZeroOrMore)

lineStyle (ZeroOrMore)

# blockTextColor

Set the text color.

## Attributes

start (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

end (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

colorName (required) - Color

*Color Name*: The color in which the text will appear.

# blockTopPadding

Set the top padding of the cells.

## Attributes

start (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

**end** (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

**length** (*required*) - Measurement *Length*: The size of the padding.

# blockValign

Define the vertical alignment of the cells.

## Attributes

start (required) - Sequence of Combination

Start Coordinates: The start table coordinates for the style instruction

**end** (required) - Sequence of Combination

End Coordinates: The end table coordinates for the style instruction

value (required) - Choice of ('middle', 'top', 'bottom')

Vertical Alignment: The vertical alignment of the text with the cells.

# bookmark

This creates a bookmark to the current page which can be referred to with the given key elsewhere. PDF offers very fine grained control over how Acrobat reader is zoomed when people link to this. The default is to keep the user's current zoom settings. the last arguments may or may not be needed depending on the choice of 'fitType'.

## Attributes

**name** (required) - Text

Name: The name of the bookmark.

**fitType** - Choice of ('fitr', 'fith', 'fitv', 'fit')

Fit Type: The Fit Type.

**left** - Measurement

Left: The left position.

top - Measurement

*Top*: The top position.

right - Measurement

Right: The right position.

zoom - Float

Zoom: The zoom level when clicking on the bookmark.

## **bulkData**

Bulk Data allows one to wuickly create a table.

# Attributes

 $\boldsymbol{content}\ (\textit{required}) - TextNodeSequence$ 

Content: The bulk data.

# circle

Draws a circle on the canvas.

# Attributes

x (required) - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the shape.

y (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the shape.

fill - Boolean

Fill: A flag to specify whether the shape should be filled.

stroke - Boolean

Stroke: A flag to specify whether the shape's outline should be drawn.

radius (required) - Measurement

Radius: The radius of the circle.

# color

Define a new color and give it a name to be known under.

## Attributes

**id** (required) - String

*Id*: The id/name the color will be available under.

**RGB** (required) - Color

*Color*: The color value that is represented.

# condPageBreak

Switch to the next page if not enough vertical space is available.

## Attributes

height (required) - Measurement

*height*: The minimal height that must be remaining on the page.

#### curves

A path of connected bezier curves drawn on the canvas.

## Attributes

curvelist (required) - TextNodeGrid

Curve List: A list of curve coordinates to draw.

# curvesTo

Create a bezier curve from the current location to the specified one.

## Attributes

curvelist (required) - TextNodeGrid

Curve Specification: Describes the end position and the curve properties.

## data

A one-dimensional series.

## Attributes

values (required) - TextNodeSequence

Values: Numerical values representing the series' data.

## data

A two-dimensional series.

# Attributes

values (required) - TextNodeGrid

Values: Numerical values representing the series' data.

# data

A 1-D data set.

# Sub-Directives

data (OneOrMore)

# data

A 2-D data set.

## Sub-Directives

data (OneOrMore)

## data

A 1-D data set.

## Sub-Directives

data (One)

# docinit

# Sub-Directives

registerType1Face (ZeroOrMore) registerFont (ZeroOrMore) registerTTFont (ZeroOrMore)

```
registerCidFont (ZeroOrMore)
color (ZeroOrMore)
```

# document

# Attributes

**filename** (required) - String

File Name: The default name of the output file, if no output file was provided.

debug - Boolean

Debug: A flag to activate the debug output.

compression - BooleanWithDefault

Compression: A flag determining whether page compression should be used.

invariant - BooleanWithDefault

*Invariant*: A flag that determines whether the produced PDF should be invariant with respect to the date and the exact contents.

## Sub-Directives

```
docinit (ZeroOrOne)
stylesheet (ZeroOrOne)
template (ZeroOrOne)
story (ZeroOrOne)
pageInfo (ZeroOrOne)
pageDrawing (ZeroOrMore)
```

# drawAlignedString

Draws a simple string (aligned to the pivot character) onto the canvas at the specified location.

## Attributes

**x** (required) - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the string.

y (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the string.

text (required) - TextNode

*Text*: The string/text that is put onto the canvas.

pivotChar (required) - Text

*Text*: The string/text that is put onto the canvas.

# drawCenteredString

Draws a simple string (centered aligned) onto the canvas at the specified location.

# Attributes

**x** (required) - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the string.

y (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the string.

text (required) - TextNode

*Text*: The string/text that is put onto the canvas.

# drawRightString

Draws a simple string (right aligned) onto the canvas at the specified location.

# Attributes

**x** (required) - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the string.

y (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the string.

**text** (required) - TextNode

*Text*: The string/text that is put onto the canvas.

# drawString

Draws a simple string (left aligned) onto the canvas at the specified location.

## Attributes

**x** (required) - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the string.

y (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the string.

**text** (required) - TextNode

*Text*: The string/text that is put onto the canvas.

# ellipse

Draws an ellipse on the canvas.

## Attributes

**x** (required) - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the shape.

y (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the shape.

fill - Boolean

Fill: A flag to specify whether the shape should be filled.

stroke - Boolean

Stroke: A flag to specify whether the shape's outline should be drawn.

width (required) - Measurement

Width: The width of the ellipse.

**height** (required) - Measurement

*Height*: The height of the ellipse.

# fill

Set the fill color.

## Attributes

color (required) - Color

Color: The color value to be set.

# fixedSize

Create a container flowable of a fixed size.

# Attributes

width (required) - Measurement

Width: The width the flowables are allotted.

**height** (required) - Measurement

*Height*: The height the flowables are allotted.

#### frame

A frame on a page.

# Attributes

x1 (required) - Measurement

*X-Position*: The X-Position of the lower-left corner of the frame.

# y1 (required) - Measurement

Y-Position: The Y-Position of the lower-left corner of the frame.

# width (required) - Measurement

Width: The width of the frame.

# height (required) - Measurement

*Height*: The height of the frame.

## id - Text

Id: The id of the frame.

# leftPadding - Measurement

Left Padding: The left padding of the frame.

## rightPadding - Measurement

Right Padding: The right padding of the frame.

#### topPadding - Measurement

*Top Padding*: The top padding of the frame.

## **bottomPadding** - Measurement

Bottom Padding: The bottom padding of the frame.

## showBoundary - Boolean

Show Boundary: A flag to show the boundary of the frame.

# grid

A shape to be drawn on the canvas.

# Attributes

xs (required) - Sequence of Measurement

*X-Coordinates*: A sequence x-coordinates that represent the vertical line positions.

# ys (required) - Sequence of Measurement

*Y-Coordinates*: A sequence y-coordinates that represent the horizontal line positions.

#### h1

Heading 1 is a simple paragraph with a special heading 1 style.

# Attributes

fontName - String

Font Name: The name of the font for the paragraph.

fontSize - Measurement

Font Size: The font size for the text of the paragraph.

# leading - Measurement

Leading: The height of a single paragraph line. It includes character height.

## **leftIndent** - Measurement

Left Indentation: General indentation on the left side.

# rightIndent - Measurement

Right Indentation: General indentation on the right side.

## firstLineIndent - Measurement

First Line Indentation: The indentation of the first line in the paragraph.

# **spaceBefore** - Measurement

Space Before: The vertical space before the paragraph.

# **spaceAfter** - Measurement

Space After: The vertical space after the paragraph.

## alignment - Choice of ('right', 'justify', 'center', 'centre', 'left')

*Alignment*: The text alignment.

## bulletFontName - String

Bullet Font Name: The font in which the bullet character will be rendered.

## bulletFontSize - Measurement

Bullet Font Size: The font size of the bullet character.

## bulletIndent - Measurement

Bullet Indentation: The indentation that is kept for a bullet point.

#### textColor - Color

*Text Color*: The color in which the text will appear.

## backColor - Color

Background Color: The background color of the paragraph.

## **keepWithNext** - Boolean

Keep with Next: When set, this paragraph will always be in the same frame as the following flowable.

## **bulletText** - String

Bullet Character: The bullet character is the ASCII representation of the symbol making up the bullet in a listing.

## dedent - Integer

Dedent: Number of characters to be removed in front of every line of the text.

## **text** (required) - XMLContent

*Text*: The text that will be layed out.

## **style** (required) - Style

Style: The paragraph style that is applied to the paragraph. See the ``paraStyle`` tag for creating a paragraph style.

## h2

Heading 2 is a simple paragraph with a special heading 2 style.

# Attributes

#### fontName - String

Font Name: The name of the font for the paragraph.

#### **fontSize** - Measurement

Font Size: The font size for the text of the paragraph.

# leading - Measurement

Leading: The height of a single paragraph line. It includes character height.

# leftIndent - Measurement

Left Indentation: General indentation on the left side.

## rightIndent - Measurement

Right Indentation: General indentation on the right side.

# firstLineIndent - Measurement

First Line Indentation: The indentation of the first line in the paragraph.

#### **spaceBefore** - Measurement

Space Before: The vertical space before the paragraph.

## **spaceAfter** - Measurement

Space After: The vertical space after the paragraph.

## **alignment** - Choice of ('right', 'justify', 'center', 'centre', 'left')

Alignment: The text alignment.

# **bulletFontName** - String

Bullet Font Name: The font in which the bullet character will be rendered.

# bulletFontSize - Measurement

Bullet Font Size: The font size of the bullet character.

## bulletIndent - Measurement

Bullet Indentation: The indentation that is kept for a bullet point.

## textColor - Color

Text Color: The color in which the text will appear.

## backColor - Color

Background Color: The background color of the paragraph.

# keepWithNext - Boolean

Keep with Next: When set, this paragraph will always be in the same frame as the following flowable.

## **bulletText** - String

Bullet Character: The bullet character is the ASCII representation of the symbol making up the bullet in a listing.

#### dedent - Integer

Dedent: Number of characters to be removed in front of every line of the text.

# text (required) - XMLContent

Text: The text that will be layed out.

## **style** (required) - Style

Style: The paragraph style that is applied to the paragraph. See the ``paraStyle`` tag for creating a paragraph style.

## h3

Heading 3 is a simple paragraph with a special heading 3 style.

## Attributes

# fontName - String

Font Name: The name of the font for the paragraph.

#### fontSize - Measurement

Font Size: The font size for the text of the paragraph.

#### **leading** - Measurement

Leading: The height of a single paragraph line. It includes character height.

# **leftIndent** - Measurement

Left Indentation: General indentation on the left side.

#### rightIndent - Measurement

Right Indentation: General indentation on the right side.

# firstLineIndent - Measurement

First Line Indentation: The indentation of the first line in the paragraph.

# spaceBefore - Measurement

Space Before: The vertical space before the paragraph.

# **spaceAfter** - Measurement

*Space After*: The vertical space after the paragraph.

# alignment - Choice of ('right', 'justify', 'center', 'centre', 'left')

Alignment: The text alignment.

# **bulletFontName** - String

Bullet Font Name: The font in which the bullet character will be rendered.

#### bulletFontSize - Measurement

Bullet Font Size: The font size of the bullet character.

## bulletIndent - Measurement

Bullet Indentation: The indentation that is kept for a bullet point.

## textColor - Color

*Text Color*: The color in which the text will appear.

# backColor - Color

Background Color: The background color of the paragraph.

# keepWithNext - Boolean

Keep with Next: When set, this paragraph will always be in the same frame as the following flowable.

## bulletText - String

Bullet Character: The bullet character is the ASCII representation of the symbol making up the bullet in a listing.

## dedent - Integer

Dedent: Number of characters to be removed in front of every line of the text.

```
text (required) - XMLContent
```

Text: The text that will be layed out.

# style (required) - Style

Style: The paragraph style that is applied to the paragraph. See the ``paraStyle`` tag for creating a paragraph style.

## hr

Create a horizontal line on the page.

## Attributes

## width - Measurement

Width: The width of the line on the page.

# thickness - Measurement

Thickness: Line Thickness

## color - Color

*Color*: The color of the line.

# **lineCap** - Choice of ('default', 'square', 'round', 'butt')

Cap: The cap at the end of the line.

## **spaceBefore** - Measurement

Space Before: The vertical space before the line.

## spaceAfter - Measurement

*Space After*: The vertical space after the line.

# align - Choice of ('decimal', 'right', 'center', 'centre', 'left')

Alignment: The alignment of the line within the frame.

# valign - Choice of ('middle', 'top', 'bottom')

*Vertical Alignment*: The vertical alignment of the line.

#### dash - Sequence of Measurement

Dash-Pattern: The dash-pattern of a line.

## illustration

Inserts an illustration with graphics elements.

## Attributes

width (required) - Measurement

Width: The width of the illustration.

# height (required) - Measurement

Height: The height of the illustration.

# image

Draws an external image on the canvas.

## Attributes

file (required) - Image

File: Reference to the external file of the iamge.

# **x** (required) - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the shape.

# y (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the shape.

## width - Measurement

Width: The width of the image.

## **height** - Measurement

Height: The height of the image.

# showBoundary - Boolean

Show Boundary: A flag determining whether a border should be drawn around the image.

# preserveAspectRatio - Boolean

Preserve Aspect Ratio: A flag determining whether the image's aspect ration should be conserved under any circumstances.

# imageAndFlowables

An image with flowables around it.

## Attributes

imageName (required) - Image

*Image*: The file that is used to extract the image data.

imageWidth - Measurement

Image Width: The width of the image.

imageHeight - Measurement

*Image Height*: The height the image.

imageMask - Color

Mask: The height the image.

imageLeftPadding - Measurement

Image Left Padding: The padding on the left side of the image.

imageRightPadding - Measurement

Image Right Padding: The padding on the right side of the image.

imageTopPadding - Measurement

Image Top Padding: The padding on the top of the image.

imageBottomPadding - Measurement

*Image Bottom Padding*: The padding on the bottom of the image.

iamgeSide - Choice of ('right', 'left')

*Image Side*: The side at which the image will be placed.

# indent

Indent the contained flowables.

## Attributes

left - Measurement

*Left*: The indentation to the left.

right - Measurement

Right: The indentation to the right.

## initialize

Do some RML processing initialization.

# Sub-Directives

name (ZeroOrMore) alias (ZeroOrMore)

# keepInFrame

Ask a flowable to stay within the frame.

#### Attributes

maxWidth - Measurement

Maximum Width: The maximum width the flowables are allotted.

maxHeight - Measurement

Maximum Height: The maximum height the flowables are allotted.

mergeSpace - Boolean

Merge Space: A flag to set whether the space should be merged.

onOverflow - Choice of ('overflow', 'shrink', 'truncate', 'error')

On Overflow: Defines what has to be done, if an overflow is detected.

id - Text

Name/Id: The name/id of the flowable.

**frame** - StringOrInt

*Frame*: The frame to which the flowable should be fitted.

# label

## Attributes

dx - Measurement

Horizontal Extension: The width of the label.

**dy** - Measurement

Vertical Extension: The height of the label.

angle - Float

Angle: The angle to rotate the label.

boxAnchor - Choice of ('c', 'e', 'sw', 'ne', 'n', 's', 'w', 'autox', 'autoy', 'se', 'nw')

Box Anchor: The position relative to the label.

boxStrokeColor - Color

Box Stroke Color: The color of the box border line.

**boxStrokeWidth** - Measurement

Box Stroke Width: The width of the box border line.

**boxFillColor** - Color

Box Fill Color: The color in which the box is filled.

boxTarget - Text

Box Target: The box target.

**fillColor** - Color

Fill Color: The color in which the label is filled.

strokeColor - Color

Stroke Color: The color of the label.

strokeWidth - Measurement

Stroke Width: The width of the label line.

**frontName** - String

Font Name: The font used to print the value.

**frontSize** - Measurement

Font Size: The size of the value text.

**leading** - Measurement

Leading: The height of a single text line. It includes character height.

width - Measurement

Width: The width the label.

maxWidth - Measurement

Maximum Width: The maximum width the label.

**height** - Measurement

*Height*: The height the label.

**textAnchor** - Choice of ('start', 'boxauto', 'end', 'middle')

*Text Anchor*: The position in the text to which the coordinates refer.

visible - Boolean

Visible: A flag making the label text visible.

**leftPadding** - Measurement

Left Padding: The size of the padding on the left side.

## rightPadding - Measurement

Right Padding: The size of the padding on the right side.

# topPadding - Measurement

*Top Padding*: The size of the padding on the top.

# bottomPadding - Measurement

Bottom Padding: The size of the padding on the bottom.

text - TextNode

## label

## Attributes

## dx - Measurement

Horizontal Extension: The width of the label.

# dy - Measurement

Vertical Extension: The height of the label.

#### angle - Float

Angle: The angle to rotate the label.

# boxAnchor - Choice of ('c', 'e', 'sw', 'ne', 'n', 's', 'w', 'autox', 'autoy', 'se', 'nw')

Box Anchor: The position relative to the label.

### boxStrokeColor - Color

Box Stroke Color: The color of the box border line.

#### **boxStrokeWidth** - Measurement

Box Stroke Width: The width of the box border line.

## boxFillColor - Color

Box Fill Color: The color in which the box is filled.

# boxTarget - Text

Box Target: The box target.

## fillColor - Color

Fill Color: The color in which the label is filled.

## strokeColor - Color

Stroke Color: The color of the label.

## strokeWidth - Measurement

Stroke Width: The width of the label line.

#### **frontName** - String

Font Name: The font used to print the value.

## **frontSize** - Measurement

Font Size: The size of the value text.

# **leading** - Measurement

Leading: The height of a single text line. It includes character height.

## width - Measurement

Width: The width the label.

## maxWidth - Measurement

Maximum Width: The maximum width the label.

# **height** - Measurement

*Height*: The height the label.

## textAnchor - Choice of ('start', 'boxauto', 'end', 'middle')

*Text Anchor*: The position in the text to which the coordinates refer.

# visible - Boolean

Visible: A flag making the label text visible.

# **leftPadding** - Measurement

Left Padding: The size of the padding on the left side.

```
rightPadding - Measurement
```

Right Padding: The size of the padding on the right side.

# topPadding - Measurement

*Top Padding*: The size of the padding on the top.

# **bottomPadding** - Measurement

Bottom Padding: The size of the padding on the bottom.

\_text - TextNode

row - Integer

col - Integer

format - String

dR - Float

# label

# Attributes

**text** (*required*) - TextNode *Text*:

# label

A label for the chart.

## Attributes

#### dx - Measurement

Horizontal Extension: The width of the label.

## dy - Measurement

Vertical Extension: The height of the label.

# angle - Float

*Angle*: The angle to rotate the label.

boxAnchor - Choice of ('c', 'e', 'sw', 'ne', 'n', 's', 'w', 'autox', 'autoy', 'se', 'nw')

*Box Anchor*: The position relative to the label.

### boxStrokeColor - Color

Box Stroke Color: The color of the box border line.

# boxStrokeWidth - Measurement

Box Stroke Width: The width of the box border line.

## **boxFillColor** - Color

Box Fill Color: The color in which the box is filled.

# boxTarget - Text

Box Target: The box target.

# fillColor - Color

Fill Color: The color in which the label is filled.

# strokeColor - Color

Stroke Color: The color of the label.

#### strokeWidth - Measurement

Stroke Width: The width of the label line.

# frontName - String

Font Name: The font used to print the value.

#### **frontSize** - Measurement

Font Size: The size of the value text.

## **leading** - Measurement

Leading: The height of a single text line. It includes character height.

#### width - Measurement

Width: The width the label.

#### maxWidth - Measurement

Maximum Width: The maximum width the label.

## **height** - Measurement

*Height*: The height the label.

# textAnchor - Choice of ('start', 'boxauto', 'end', 'middle')

*Text Anchor*: The position in the text to which the coordinates refer.

## visible - Boolean

Visible: A flag making the label text visible.

## **leftPadding** - Measurement

*Left Padding*: The size of the padding on the left side.

## rightPadding - Measurement

Right Padding: The size of the padding on the right side.

# topPadding - Measurement

Top Padding: The size of the padding on the top.

## **bottomPadding** - Measurement

Bottom Padding: The size of the padding on the bottom.

#### x - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the label.

## y - Measurement

Y-Coordinate: The Y-coordinate of the lower-left position of the label.

## text (required) - TextNode

*Text*: The label text to be displayed.

# label

## Attributes

#### dx - Measurement

Horizontal Extension: The width of the label.

#### **dy** - Measurement

Vertical Extension: The height of the label.

# angle - Float

Angle: The angle to rotate the label.

# **boxAnchor** - Choice of ('c', 'e', 'sw', 'ne', 'n', 's', 'w', 'autox', 'autoy', 'se', 'nw')

Box Anchor: The position relative to the label.

## boxStrokeColor - Color

Box Stroke Color: The color of the box border line.

## boxStrokeWidth - Measurement

Box Stroke Width: The width of the box border line.

## **boxFillColor** - Color

Box Fill Color: The color in which the box is filled.

## **boxTarget** - Text

Box Target: The box target.

## fillColor - Color

Fill Color: The color in which the label is filled.

# strokeColor - Color

Stroke Color: The color of the label.

## strokeWidth - Measurement

Stroke Width: The width of the label line.

# frontName - String

Font Name: The font used to print the value.

frontSize - Measurement

Font Size: The size of the value text.

**leading** - Measurement

Leading: The height of a single text line. It includes character height.

width - Measurement

Width: The width the label.

maxWidth - Measurement

Maximum Width: The maximum width the label.

**height** - Measurement

Height: The height the label.

textAnchor - Choice of ('start', 'boxauto', 'end', 'middle')

*Text Anchor*: The position in the text to which the coordinates refer.

visible - Boolean

Visible: A flag making the label text visible.

leftPadding - Measurement

Left Padding: The size of the padding on the left side.

rightPadding - Measurement

Right Padding: The size of the padding on the right side.

topPadding - Measurement

*Top Padding*: The size of the padding on the top.

**bottomPadding** - Measurement

Bottom Padding: The size of the padding on the bottom.

**text** (required) - TextNode

*Text*: The label text to be displayed.

# labels

# Sub-Directives

label (OneOrMore)

# line

# Attributes

strokeWidth - Measurement

strokeColor - Color

strokeDashArray - Sequence of Float

symbol - Symbol

name - Text

# lineLabels

A set of labels.

# Attributes

dx - Measurement

Horizontal Extension: The width of the label.

dy - Measurement

Vertical Extension: The height of the label.

angle - Float

Angle: The angle to rotate the label.

boxAnchor - Choice of ('c', 'e', 'sw', 'ne', 'n', 's', 'w', 'autox', 'autoy', 'se', 'nw')

*Box Anchor*: The position relative to the label.

boxStrokeColor - Color

Box Stroke Color: The color of the box border line.

boxStrokeWidth - Measurement

Box Stroke Width: The width of the box border line.

**boxFillColor** - Color

Box Fill Color: The color in which the box is filled.

boxTarget - Text

Box Target: The box target.

fillColor - Color

Fill Color: The color in which the label is filled.

strokeColor - Color

Stroke Color: The color of the label.

strokeWidth - Measurement

Stroke Width: The width of the label line.

frontName - String

Font Name: The font used to print the value.

**frontSize** - Measurement

Font Size: The size of the value text.

**leading** - Measurement

Leading: The height of a single text line. It includes character height.

width - Measurement

Width: The width the label.

maxWidth - Measurement

Maximum Width: The maximum width the label.

height - Measurement

*Height*: The height the label.

textAnchor - Choice of ('start', 'boxauto', 'end', 'middle')

*Text Anchor*: The position in the text to which the coordinates refer.

visible - Boolean

Visible: A flag making the label text visible.

**leftPadding** - Measurement

Left Padding: The size of the padding on the left side.

rightPadding - Measurement

Right Padding: The size of the padding on the right side.

**topPadding** - Measurement

Top Padding: The size of the padding on the top.

**bottomPadding** - Measurement

Bottom Padding: The size of the padding on the bottom.

x - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the label.

y - Measurement

Y-Coordinate: The Y-coordinate of the lower-left position of the label.

Sub-Directives

label (ZeroOrMore)

# lineMode

Set the line mode for the following graphics elements.

Attributes

```
width - Measurement
Width: The line width.
dash - Sequence of Measurement
Dash-Pattern: The dash-pattern of a line.
miterLimit - Measurement
Miter Limit: The ???.
join - Choice of ('bevelled', 'mitered', 'round')
Join: The way lines are joined together.
```

cap - Choice of ('default', 'square', 'round', 'butt')

Cap: The cap is the description of how the line-endings look.

# linePlot

# Attributes

dx - Measurement

dy - Measurement

dwidth - Measurement

dheight - Measurement

angle - Float

x - Measurement

y - Measurement

width - Measurement

height - Measurement

strokeColor - Color

strokeWidth - Measurement

fillColor - Color

debug - Boolean

reversePlotOrder - Boolean

lineLabelNudge - Measurement

lineLabelFormat - String

joinedLines - Boolean

## Sub-Directives

data (One) lines (ZeroOrOne) xValueAxis (ZeroOrOne) yValueAxis (ZeroOrOne) lineLabels (ZeroOrOne) texts (ZeroOrOne)

# lineStyle

Define the border line style of each cell.

## Attributes

```
    start (required) - Sequence of Combination
        Start Coordinates: The start table coordinates for the style instruction
    end (required) - Sequence of Combination
        End Coordinates: The end table coordinates for the style instruction
    kind (required) - Choice of ('box', 'outline', 'innergrid', 'linebefore', 'lineabove', 'lineable', 'grid')
```

```
Kind: The kind of line actions to be taken.
```

thickness (required) - Measurement

Thickness: Line Thickness

**colorName** (required) - Color

*Color*: The color of the border line.

cap (required) - Choice of ('default', 'square', 'round', 'butt')

Cap: The cap at the end of a border line.

dash - Sequence of Measurement

Dash-Pattern: The dash-pattern of a line.

join - Choice of ('bevelled', 'mitered', 'round')

Join: The way lines are joined together.

count - Integer

*Count*: Describes whether the line is a single (1) or double (2) line.

## lines

A path of connected lines drawn on the canvas.

# Attributes

**linelist** (required) - TextNodeGrid
Line List: A list of lines coordinates to draw.

# lines

# Attributes

strokeWidth - Measurement
strokeColor - Color
strokeDashArray - Sequence of Float
symbol - Symbol

## Sub-Directives

**line** (OneOrMore)

# moveTo

Move the path cursor to the specified location.

# Attributes

**position** (required) - TextNodeSequence *Position*: Position to which the path pointer is moved to.

## name

Defines a name for a string.

## Attributes

id (required) - String

*Id*: The id under which the value will be known.

**value** (required) - Text

*Value*: The text that is displayed if the id is called.

# nextFrame

Switch to the next frame.

## Attributes

name - StringOrInt

Name: The name or index of the next frame.

# nextPage

Switch to the next page.

# outlineAdd

Add a new entry to the outline of the PDF.

#### Attributes

# pageDrawing

Draws directly on the content of one page's canvas. Every call of this directive creates a new page.

## Sub-Directives

```
drawString (ZeroOrMore)
drawRightString (ZeroOrMore)
drawCenteredString (ZeroOrMore)
drawCentredString (ZeroOrMore)
drawAlignedString (ZeroOrMore)
ellipse (ZeroOrMore)
circle (ZeroOrMore)
rect (ZeroOrMore)
grid (ZeroOrMore)
lines (ZeroOrMore)
curves (ZeroOrMore)
image (ZeroOrMore)
place (ZeroOrMore)
textAnnotation (ZeroOrMore)
path (ZeroOrMore)
fill (ZeroOrMore)
stroke (ZeroOrMore)
setFont (ZeroOrMore)
scale (ZeroOrMore)
translate (ZeroOrMore)
rotate (ZeroOrMore)
skew (ZeroOrMore)
transform (ZeroOrMore)
lineMode (ZeroOrMore)
barCode (ZeroOrMore)
barChart (ZeroOrMore)
barChart3D (ZeroOrMore)
linePlot (ZeroOrMore)
pieChart (ZeroOrMore)
pieChart3D (ZeroOrMore)
spiderChart (ZeroOrMore)
```

# pageGraphics

Define the page graphics for the page template.

# pageInfo

Set's up page-global settings.

# Attributes

pageSize (required) - PageSize

Page Size: The page size of all pages within this document.

# pageTemplate

Define a page template.

#### Attributes

id (required) - Text

*Id*: The id of the template.

pagesize - PageSize

Page Size: The Page Size.

rotation - Integer

Rotation: The rotation of the page in multiples of 90 degrees.

## Sub-Directives

frame (OneOrMore)

pageGraphics (ZeroOrOne)

## para

Lays out an entire paragraph.

## Attributes

fontName - String

Font Name: The name of the font for the paragraph.

fontSize - Measurement

Font Size: The font size for the text of the paragraph.

**leading** - Measurement

Leading: The height of a single paragraph line. It includes character height.

leftIndent - Measurement

Left Indentation: General indentation on the left side.

rightIndent - Measurement

Right Indentation: General indentation on the right side.

firstLineIndent - Measurement

First Line Indentation: The indentation of the first line in the paragraph.

spaceBefore - Measurement

Space Before: The vertical space before the paragraph.

spaceAfter - Measurement

Space After: The vertical space after the paragraph.

alignment - Choice of ('right', 'justify', 'center', 'centre', 'left')

Alignment: The text alignment.

**bulletFontName** - String

Bullet Font Name: The font in which the bullet character will be rendered.

bulletFontSize - Measurement

Bullet Font Size: The font size of the bullet character.

bulletIndent - Measurement

Bullet Indentation: The indentation that is kept for a bullet point.

textColor - Color

*Text Color*: The color in which the text will appear.

## backColor - Color

Background Color: The background color of the paragraph.

# keepWithNext - Boolean

Keep with Next: When set, this paragraph will always be in the same frame as the following flowable.

## style (required) - Style

Style: The paragraph style that is applied to the paragraph. See the ``paraStyle`` tag for creating a paragraph style.

#### **bulletText** - String

Bullet Character: The bullet character is the ASCII representation of the symbol making up the bullet in a listing.

## dedent - Integer

Dedent: Number of characters to be removed in front of every line of the text.

# text (required) - XMLContent

*Text*: The text that will be layed out.

# paraStyle

Defines a paragraph style and gives it a name.

# Attributes

# fontName - String

Font Name: The name of the font for the paragraph.

#### fontSize - Measurement

Font Size: The font size for the text of the paragraph.

#### **leading** - Measurement

Leading: The height of a single paragraph line. It includes character height.

# leftIndent - Measurement

Left Indentation: General indentation on the left side.

#### rightIndent - Measurement

Right Indentation: General indentation on the right side.

# firstLineIndent - Measurement

First Line Indentation: The indentation of the first line in the paragraph.

# **spaceBefore** - Measurement

Space Before: The vertical space before the paragraph.

# **spaceAfter** - Measurement

*Space After*: The vertical space after the paragraph.

# alignment - Choice of ('right', 'justify', 'center', 'centre', 'left')

Alignment: The text alignment.

# **bulletFontName** - String

Bullet Font Name: The font in which the bullet character will be rendered.

#### bulletFontSize - Measurement

Bullet Font Size: The font size of the bullet character.

## bulletIndent - Measurement

Bullet Indentation: The indentation that is kept for a bullet point.

#### textColor - Color

Text Color: The color in which the text will appear.

## backColor - Color

Background Color: The background color of the paragraph.

# keepWithNext - Boolean

*Keep with Next*: When set, this paragraph will always be in the same frame as the following flowable.

## name (required) - String

*Name*: The name of the style.

## alias - String

Alias: An alias under which the style will also be known as.

```
parent - Style
```

Parent: The apragraph style that will be used as a base for this one.

# param

Sets one paramter for the text annotation.

## Attributes

name (required) - String

Name: The name of the paramter.

**value** (required) - TextNode Value: The parameter value.

# path

Create a line path.

# Attributes

**x** (required) - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the shape.

y (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the shape.

fill - Boolean

Fill: A flag to specify whether the shape should be filled.

stroke - Boolean

Stroke: A flag to specify whether the shape's outline should be drawn.

points (required) - TextNodeGrid

Points: A list of coordinate points that define th path.

close - Boolean

Close Path: A flag specifying whether the path should be closed.

# Sub-Directives

moveTo (ZeroOrMore) curvesTo (ZeroOrMore)

# pieChart

## Attributes

dx - Measurement

dy - Measurement

dwidth - Measurement

dheight - Measurement

angle - Float

x - Measurement

y - Measurement

width - Measurement

height - Measurement

strokeColor - Color

strokeWidth - Measurement

fillColor - Color

debug - Boolean

startAngle - Integer

```
direction - Choice of ('clockwise', 'anticlockwise')
   checkLabelOverlap - Boolean
  pointerLabelMode - Choice of ('none', 'leftandright', 'leftright')
   sameRadii - Boolean
  orderMode - Choice of ('alternate', 'fixed')
  xradius - Measurement
  yradius - Measurement
Sub-Directives
 data (One)
 slices (ZeroOrOne)
 labels (ZeroOrOne)
 texts (ZeroOrOne)
pieChart3D
Attributes
   dx - Measurement
   dy - Measurement
   dwidth - Measurement
   dheight - Measurement
  angle - Float
   x - Measurement
   y - Measurement
   width - Measurement
  height - Measurement
  strokeColor - Color
   strokeWidth - Measurement
  fillColor - Color
  debug - Boolean
  startAngle - Integer
  direction - Choice of ('clockwise', 'anticlockwise')
   checkLabelOverlap - Boolean
   pointerLabelMode - Choice of ('none', 'leftandright', 'leftright')
   sameRadii - Boolean
   orderMode - Choice of ('alternate', 'fixed')
  xradius - Measurement
  yradius - Measurement
   perspective - Float
   depth_3d - Measurement
  angle 3d - Float
Sub-Directives
 slices (One)
 texts (ZeroOrOne)
```

# place

Draws a set of flowables on the canvas within a given region.

## Attributes

```
x (required) - Measurement
```

*X-Coordinate*: The X-coordinate of the lower-left position of the place.

y (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the place.

width - Measurement

Width: The width of the place.

**height** - Measurement

Height: The height of the place.

# plugInFlowable

Inserts a custom flowable developed in Python.

## Attributes

```
module (required) - String
```

Module: The Python module in which the flowable is located.

**function** (required) - String

Function: The name of the factory function within the module that returns the custom flowable.

params - TextNode

Parameters: A list of parameters encoded as a long string.

# pointer

## Attributes

```
strokeColor - Color
```

strokeWidth - Measurement

elbowLength - Measurement

edgePad - Measurement

piePad - Measurement

## pre

A preformatted text, similar to the tag in HTML.

# Attributes

```
style (required) - Style
```

Style: The paragraph style that is applied to the paragraph. See the ``paraStyle`` tag for creating a paragraph style.

## **bulletText** - String

Bullet Character: The bullet character is the ASCII representation of the symbol making up the bullet in a listing.

# dedent - Integer

Dedent: Number of characters to be removed in front of every line of the text.

text (required) - RawXMLContent

*Text*: The text that will be layed out.

# pto

A container for flowables decorated with trailer & header lists. If the split operation would be called then the trailer and header lists are injected before and after the split. This allows specialist "please turn over" and "continued from previous" like behaviours.

#### rect

Draws an ellipse on the canvas.

## Attributes

**x** (required) - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the shape.

v (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the shape.

fill - Boolean

Fill: A flag to specify whether the shape should be filled.

stroke - Boolean

Stroke: A flag to specify whether the shape's outline should be drawn.

width (required) - Measurement

Width: The width of the rectangle.

**height** (required) - Measurement

*Height*: The height of the rectangle.

round - Measurement

Corner Radius: The radius of the rounded corners.

# registerCidFont

Register a new CID font given the face name.

#### Attributes

**faceName** (required) - String

Face Name: The name of the face the font uses. The face has to be previously registered.

# registerFont

Register a new font based on a face and encoding.

## Attributes

**name** (required) - String

Name: The name under which the font can be used in style declarations or other parameters that lookup a font.

faceName (required) - String

Face Name: The name of the face the font uses. The face has to be previously registered.

encName (required) - String

Encoding Name: The name of the encoding to be used.

# registerTTFont

Register a new TrueType font given the TT file and face name.

## Attributes

**faceName** (required) - String

Face Name: The name of the face the font uses. The face has to be previously registered.

**fileName** (required) - String

File Name: File path of the of the TrueType font.

# registerType1Face

Register a new Type 1 font face.

## Attributes

**afmFile** (required) - String

AFM File: Path to AFM file used to register the Type 1 face.

**pfbFile** (required) - String

#### rotate

Rotate the drawing counterclockwise.

#### Attributes

**degrees** (*required*) - Measurement *Angle*: The angle in degrees.

## scale

Scale the drawing using x and y sclaing factors.

#### Attributes

```
    sx (required) - Float
        X-Scaling-Factor: The scaling factor applied on x-coordinates.
    sy (required) - Float
        Y-Scaling-Factor: The scaling factor applied on y-coordinates.
```

# setFont

Set the font name and/or size.

#### Attributes

```
name (required) - String
Font Name: The name of the font as it was registered.
size (required) - Measurement
Size: The font size.
leading - Measurement
Leading: The font leading.
```

## setNextFrame

Define the next frame to switch to.

## Attributes

```
name (required) - StringOrInt Name: The name or index of the next frame.
```

# set Next Template

Define the next page template to use.

#### Attributes

```
name (required) - StringOrInt
Name: The name or index of the next page template.
```

#### skew

Skew the drawing.

## Attributes

#### slice

#### Attributes

```
strokeWidth - Measurement
  fillColor - Color
  strokeColor - Color
  strokeDashArray - Sequence of Float
  popout - Measurement
  fontName - String
  fontSize - Measurement
  labelRadius - Measurement
  swatchMarker - Symbol
Sub-Directives
 label (ZeroOrOne)
 pointer (ZeroOrOne)
slice
Attributes
  strokeWidth - Measurement
  fillColor - Color
  strokeColor - Color
  strokeDashArray - Sequence of Float
  popout - Measurement
  fontName - String
  fontSize - Measurement
  labelRadius - Measurement
  swatchMarker - Symbol
  fillColorShaded - Color
slices
Attributes
  strokeWidth - Measurement
  fillColor - Color
  strokeColor - Color
  strokeDashArray - Sequence of Float
  popout - Measurement
  fontName - String
  fontSize - Measurement
  labelRadius - Measurement
  fillColorShaded - Color
Sub-Directives
 slice (OneOrMore)
slices
Attributes
  strokeWidth - Measurement
```

```
fillColor - Color

strokeColor - Color

strokeDashArray - Sequence of Float

popout - Measurement

fontName - String

fontSize - Measurement

labelRadius - Measurement
```

#### Sub-Directives

slice (OneOrMore)

# spacer

Creates a vertical space in the flow.

#### Attributes

width - Measurement

Width: The width of the spacer. Currently not implemented.

**length** (*required*) - Measurement *Length*: The height of the spacer.

# **spiderChart**

#### Attributes

dx - Measurement

dy - Measurement

dwidth - Measurement

dheight - Measurement

angle - Float

x - Measurement

y - Measurement

width - Measurement

**height** - Measurement

strokeColor - Color

strokeWidth - Measurement

fillColor - Color

debug - Boolean

**startAngle** - Integer

direction - Choice of ('clockwise', 'anticlockwise')

## Sub-Directives

data (One) strands (ZeroOrOne) strandLabels (ZeroOrOne) spokes (ZeroOrOne) spokeLabels (ZeroOrOne) labels (ZeroOrOne) texts (ZeroOrOne)

## spoke

#### Attributes

strokeWidth - Measurement

fillColor - Color

strokeColor - Color

strokeDashArray - Sequence of Float

labelRadius - Measurement

visible - Measurement

# spokeLabels

A set of spoke labels.

## Attributes

dx - Measurement

Horizontal Extension: The width of the label.

dy - Measurement

Vertical Extension: The height of the label.

angle - Float

*Angle*: The angle to rotate the label.

**boxAnchor** - Choice of ('c', 'e', 'sw', 'ne', 'n', 's', 'w', 'autox', 'autoy', 'se', 'nw')

Box Anchor: The position relative to the label.

boxStrokeColor - Color

Box Stroke Color: The color of the box border line.

boxStrokeWidth - Measurement

Box Stroke Width: The width of the box border line.

**boxFillColor** - Color

Box Fill Color: The color in which the box is filled.

boxTarget - Text

Box Target: The box target.

fillColor - Color

Fill Color: The color in which the label is filled.

strokeColor - Color

Stroke Color: The color of the label.

strokeWidth - Measurement

Stroke Width: The width of the label line.

frontName - String

Font Name: The font used to print the value.

frontSize - Measurement

Font Size: The size of the value text.

**leading** - Measurement

Leading: The height of a single text line. It includes character height.

width - Measurement

Width: The width the label.

maxWidth - Measurement

Maximum Width: The maximum width the label.

**height** - Measurement

*Height*: The height the label.

textAnchor - Choice of ('start', 'boxauto', 'end', 'middle')

*Text Anchor*: The position in the text to which the coordinates refer.

visible - Boolean

Visible: A flag making the label text visible.

```
leftPadding - Measurement
```

Left Padding: The size of the padding on the left side.

## rightPadding - Measurement

Right Padding: The size of the padding on the right side.

## topPadding - Measurement

Top Padding: The size of the padding on the top.

#### bottomPadding - Measurement

Bottom Padding: The size of the padding on the bottom.

#### Sub-Directives

label (OneOrMore)

# spokes

A collection of spokes.

#### Attributes

strokeWidth - Measurement

fillColor - Color

strokeColor - Color

strokeDashArray - Sequence of Float

labelRadius - Measurement

visible - Measurement

#### Sub-Directives

spoke (OneOrMore)

## story

The story of the PDF file.

## Attributes

## firstPageTemplate - Text

First Page Template: The first page template to be used.

#### Sub-Directives

spacer (ZeroOrMore)

 $\textbf{illustration} \ (ZeroOrMore)$ 

pre (ZeroOrMore)

xpre (ZeroOrMore)

plugInFlowable (ZeroOrMore)

**barCodeFlowable** (ZeroOrMore)

outlineAdd (ZeroOrMore)

title (ZeroOrMore)

**h1** (ZeroOrMore)

h2 (ZeroOrMore)

h3 (ZeroOrMore)

para (ZeroOrMore)

 $blockTable\ (ZeroOrMore)$ 

nextFrame (ZeroOrMore)

setNextFrame (ZeroOrMore)

**nextPage** (ZeroOrMore)

 $\textbf{setNextTemplate} \ (ZeroOrMore)$ 

 $condPageBreak\ (ZeroOrMore)$ 

keepInFrame~(ZeroOrMore)

 $image And Flowables\ (Zero Or More)$ 

pto (ZeroOrMore)

```
indent (ZeroOrMore)
fixedSize (ZeroOrMore)
bookmark (ZeroOrMore)
hr (ZeroOrMore)
name (ZeroOrMore)
```

## strand

```
Attributes
strokeWidth - Measurement
fillColor - Color
strokeColor - Color
strokeDashArray - Sequence of Float
symbol - Symbol
symbolSize - Measurement
name - Text
```

## strandLabels

A set of strand labels.

#### Attributes

dx - Measurement

Horizontal Extension: The width of the label.

dy - Measurement

Vertical Extension: The height of the label.

angle - Float

Angle: The angle to rotate the label.

**boxAnchor** - Choice of ('c', 'e', 'sw', 'ne', 'n', 's', 'w', 'autox', 'autoy', 'se', 'nw') *Box Anchor*: The position relative to the label.

boxStrokeColor - Color

Box Stroke Color: The color of the box border line.

boxStrokeWidth - Measurement

Box Stroke Width: The width of the box border line.

boxFillColor - Color

Box Fill Color: The color in which the box is filled.

**boxTarget** - Text

Box Target: The box target.

fillColor - Color

Fill Color: The color in which the label is filled.

strokeColor - Color

Stroke Color: The color of the label.

strokeWidth - Measurement

Stroke Width: The width of the label line.

frontName - String

Font Name: The font used to print the value.

**frontSize** - Measurement

Font Size: The size of the value text.

**leading** - Measurement

Leading: The height of a single text line. It includes character height.

width - Measurement

Width: The width the label.

```
maxWidth - Measurement
```

Maximum Width: The maximum width the label.

## **height** - Measurement

*Height*: The height the label.

## **textAnchor** - Choice of ('start', 'boxauto', 'end', 'middle')

*Text Anchor*: The position in the text to which the coordinates refer.

#### visible - Boolean

Visible: A flag making the label text visible.

## **leftPadding** - Measurement

Left Padding: The size of the padding on the left side.

#### rightPadding - Measurement

Right Padding: The size of the padding on the right side.

## topPadding - Measurement

Top Padding: The size of the padding on the top.

## **bottomPadding** - Measurement

Bottom Padding: The size of the padding on the bottom.

\_text - TextNode

row - Integer

col - Integer

format - String

#### Sub-Directives

label (OneOrMore)

#### strands

A collection of strands.

#### Attributes

strokeWidth - Measurement

fillColor - Color

strokeColor - Color

strokeDashArray - Sequence of Float

symbol - Symbol

symbolSize - Measurement

name - Text

## Sub-Directives

strand (OneOrMore)

#### stroke

Set the fill color.

## Attributes

color (required) - Color

Color: The color value to be set.

# stylesheet

A styleheet defines the styles that can be used in the document.

#### Sub-Directives

initialize (ZeroOrOne)

# paraStyle (ZeroOrMore) blockTableStyle (ZeroOrMore)

#### td

A table cell within a table.

#### Attributes

#### content (required) - RawXMLContent

Content: The content of the cell; can be text or any flowable.

#### fontName - String

Font Name: The name of the font for the cell.

## fontSize - Measurement

Font Size: The font size for the text of the cell.

#### **leading** - Measurement

Leading: The height of a single text line. It includes character height.

#### fontColor - Color

Font Color: The color in which the text will appear.

#### leftPadding - Measurement

Left Padding: The size of the padding on the left side.

#### rightPadding - Measurement

Right Padding: The size of the padding on the right side.

#### **topPadding** - Measurement

Top Padding: The size of the padding on the top.

## bottomPadding - Measurement

Bottom Padding: The size of the padding on the bottom.

#### background - Color

Background Color: The color to use as the background for the cell.

#### align - Choice of ('decimal', 'right', 'center', 'centre', 'left')

Text Alignment: The text alignment within the cell.

#### **vAlign** - Choice of ('middle', 'top', 'bottom')

Vertical Alignment: The vertical alignment of the text within the cell.

## lineBelowThickness - Measurement

Line Below Thickness: The thickness of the line below the cell.

#### lineBelowColor - Color

Line Below Color: The color of the line below the cell.

## lineBelowCap - Choice of ('default', 'square', 'round', 'butt')

*Line Below Cap*: The cap at the end of the line below the cell.

#### lineBelowCount - Integer

Line Below Count: Describes whether the line below is a single (1) or double (2) line.

#### lineBelowSpace - Measurement

Line Below Space: The space of the line below the cell.

#### lineAboveThickness - Measurement

Line Above Thickness: The thickness of the line above the cell.

#### lineAboveColor - Color

*Line Above Color*: The color of the line above the cell.

## lineAboveCap - Choice of ('default', 'square', 'round', 'butt')

*Line Above Cap*: The cap at the end of the line above the cell.

## lineAboveCount - Integer

Line Above Count: Describes whether the line above is a single (1) or double (2) line.

#### lineAboveSpace - Measurement

Line Above Space: The space of the line above the cell.

#### lineLeftThickness - Measurement

Left Line Thickness: The thickness of the line left of the cell.

#### lineLeftColor - Color

Left Line Color: The color of the line left of the cell.

# lineLeftCap - Choice of ('default', 'square', 'round', 'butt')

*Line Left Cap*: The cap at the end of the line left of the cell.

#### lineLeftCount - Integer

Line Left Count: Describes whether the left line is a single (1) or double (2) line.

#### **lineLeftSpace** - Measurement

Line Left Space: The space of the line left of the cell.

#### lineRightThickness - Measurement

Right Line Thickness: The thickness of the line right of the cell.

#### lineRightColor - Color

Right Line Color: The color of the line right of the cell.

## **lineRightCap** - Choice of ('default', 'square', 'round', 'butt')

Line Right Cap: The cap at the end of the line right of the cell.

#### lineRightCount - Integer

*Line Right Count*: Describes whether the right line is a single (1) or double (2) line.

#### lineRightSpace - Measurement

*Line Right Space*: The space of the line right of the cell.

## template

Define a page template.

#### Attributes

#### pagesize - PageSize

Page Size: The Page Size.

#### rotation - Integer

Rotation: The rotation of the page in multiples of 90 degrees.

#### **leftMargin** - Measurement

Left Margin: The left margin of the template.

## rightMargin - Measurement

Right Margin: The right margin of the template.

#### topMargin - Measurement

Top Margin: The top margin of the template.

## bottomMargin - Measurement

Bottom Margin: The bottom margin of the template.

#### showBoundary - Boolean

Show Boundary: A flag to show the boundary of the template.

#### allowSplitting - Boolean

Allow Splitting: A flag to allow splitting over multiple templates.

#### title - Text

Title: The title of the PDF document.

#### author - Text

Author: The author of the PDF document.

#### Sub-Directives

pageTemplate (OneOrMore)

#### text

Draw a text on the chart.

#### Attributes

**x** (required) - Measurement

*X-Coordinate*: The X-coordinate of the lower-left position of the text.

y (required) - Measurement

*Y-Coordinate*: The Y-coordinate of the lower-left position of the text.

angle - Float

*Rotation Angle*: The angle about which the text will be rotated.

text (required) - TextNode

*Text*: The text to be printed.

**fontName** - String

Font Name: The name of the font.

fontSize - Measurement

Font Size: The font size for the text.

**fillColor** - Color

*Fill Color*: The color in which the text will appear.

**textAnchor** - Choice of ('start', 'boxauto', 'end', 'middle')

*Text Anchor*: The position in the text to which the coordinates refer.

## textAnnotation

Writes a low-level text annotation into the PDF.

#### Attributes

contents (required) - FirstLevelTextNode

Contents: The PDF commands that are inserted as annotation.

#### Sub-Directives

param (ZeroOrMore)

#### texts

A set of texts drawn on the chart.

## Sub-Directives

text (ZeroOrMore)

#### title

The title is a simple paragraph with a special title style.

#### Attributes

fontName - String

Font Name: The name of the font for the paragraph.

fontSize - Measurement

Font Size: The font size for the text of the paragraph.

**leading** - Measurement

Leading: The height of a single paragraph line. It includes character height.

**leftIndent** - Measurement

Left Indentation: General indentation on the left side.

#### rightIndent - Measurement

Right Indentation: General indentation on the right side.

#### firstLineIndent - Measurement

First Line Indentation: The indentation of the first line in the paragraph.

## **spaceBefore** - Measurement

Space Before: The vertical space before the paragraph.

## spaceAfter - Measurement

Space After: The vertical space after the paragraph.

## alignment - Choice of ('right', 'justify', 'center', 'centre', 'left')

*Alignment*: The text alignment.

#### **bulletFontName** - String

Bullet Font Name: The font in which the bullet character will be rendered.

#### **bulletFontSize** - Measurement

Bullet Font Size: The font size of the bullet character.

#### **bulletIndent** - Measurement

Bullet Indentation: The indentation that is kept for a bullet point.

#### textColor - Color

*Text Color*: The color in which the text will appear.

#### backColor - Color

Background Color: The background color of the paragraph.

## keepWithNext - Boolean

Keep with Next: When set, this paragraph will always be in the same frame as the following flowable.

#### **bulletText** - String

Bullet Character: The bullet character is the ASCII representation of the symbol making up the bullet in a listing.

#### dedent - Integer

Dedent: Number of characters to be removed in front of every line of the text.

#### text (required) - XMLContent

*Text*: The text that will be layed out.

#### **style** (required) - Style

Style: The paragraph style that is applied to the paragraph. See the ``paraStyle`` tag for creating a paragraph style.

#### tr

A table row in the block table.

#### Sub-Directives

td (OneOrMore)

#### transform

A full 2-D matrix transformation

## Attributes

**matrix** (*required*) - TextNodeSequence *Matrix*: The transformation matrix.

## translate

Translate the drawing coordinates by the specified x and y offset.

## Attributes

dx (required) - Measurement

*X-Offset*: The amount to move the drawing to the right.

**dy** (required) - Measurement

*Y-Offset*: The amount to move the drawing upward.

## **xValueAxis**

#### Attributes

visible - Boolean

visibleAxis - Boolean

```
visibleTicks - Boolean
   visibleLabels - Boolean
   visibleGrid - Boolean
   strokeWidth - Measurement
   strokeColor - Color
   strokeDashArray - Sequence of Float
   gridStrokeWidth - Measurement
   gridStrokeColor - Color
   gridStrokeDashArray - Sequence of Float
   gridStart - Measurement
   gridEnd - Measurement
   style - Choice of ('stacked', 'parallel', 'parallel_3d')
   forceZero - Boolean
   minimumTickSpacing - Measurement
   maximumTicks - Integer
   labelTextFormat - String
   labelTextPostFormat - Text
   labelTextScale - Float
   valueMin - Float
   valueMax - Float
   valueStep - Float
   valueSteps - Measurement
   rangeRound - Text
   zrangePref - Float
   tickUp - Measurement
   tickDown - Measurement
   joinAxis - Boolean
   joinAxisMode - Choice of ('top', 'points', 'none', 'value', 'bottom')
   joinAxisPos - Measurement
xpre
A preformatted text that allows paragraph markup.
Attributes
   style (required) - Style
     Style: The paragraph style that is applied to the paragraph. See the ``paraStyle`` tag for creating a paragraph style.
   bulletText - String
     Bullet Character: The bullet character is the ASCII representation of the symbol making up the bullet in a listing.
   dedent - Integer
     Dedent: Number of characters to be removed in front of every line of the text.
   text (required) - RawXMLContent
     Text: The text that will be layed out.
```

# yValueAxis

#### Attributes

visible - Boolean

visibleAxis - Boolean

visibleTicks - Boolean

visibleLabels - Boolean

visibleGrid - Boolean

strokeWidth - Measurement

strokeColor - Color

strokeDashArray - Sequence of Float

gridStrokeWidth - Measurement

gridStrokeColor - Color

gridStrokeDashArray - Sequence of Float

gridStart - Measurement

gridEnd - Measurement

style - Choice of ('stacked', 'parallel', 'parallel\_3d')

forceZero - Boolean

minimumTickSpacing - Measurement

maximumTicks - Integer

labelTextFormat - String

labelTextPostFormat - Text

labelTextScale - Float

valueMin - Float

valueMax - Float

valueStep - Float

valueSteps - Measurement

rangeRound - Text

zrangePref - Float

tickLeft - Measurement

tickRight - Measurement

joinAxis - Boolean

joinAxisMode - Choice of ('top', 'points', 'none', 'value', 'bottom')

joinAxisPos - Measurement