indica labs
informed pathology

Annotation file format (.annotation)

The annotation file exported from HALO contains an XML (eXtensible Markup Language) description of the annotations associated with the image. This document describes the XML structure used by this file. An understanding of XML itself is assumed. Please examine .annotation files exported by HALO in a text editor in conjunction with this document to understand them.

There will be one or more Annotations elements, each of these represents an annotation layer on the image.

<Annotations>

Line Color: The color to draw this annotation layer (decimal format).

Name: A user assigned name for the annotation layer.

Visible: Determines if the annotation layer is visible or invisible. True corresponds to visible and False corresponds to not visible.

Inside the Annotations element there will be one or more Region elements, each of these represents an annotation region on the image.

<Regions>

Region Type: Indicates what type of region the annotation is (eg. Rectangle, Ellipse, ...). Details below.

Has Endcaps: Indicates if endcaps are displayed on a polygon. 0 indicates no endcaps and 1 indicates endcaps.

Negative ROA: Indicates if the region is positive or negative for analysis. 0 indicates the region is positive and 1 indicates the region is negative (an exclusion region).

Inside the Regions element there will be one or more Vertex elements, each of these represents the vertices of the region and are specific to the region type.

<Vertices>

The vertices of the annotation region depend on the 'type' parameter as follows:

Rectangle:

x1 - X position of first corner of the rectangle
y1 - Y position of first corner of the rectangle
x2 - X position of other corner of the rectangle
y2 - Y position of other corner of the rectangle

Ellipse

x1 - X position of first corner of the ellipse
y1 - Y position of first corner of the ellipse
x2 - X position of other corner of the ellipse
y2 - Y position of other corner of the ellipse

Ruler:

x1 - X position of start of measurement
y1 - Y position of start of measurement
x2 - X position of end of measurement
y2 - Y position of end of measurement

Polygon:

Contains any number of '<V>' child elements representing each x,y vertex position as follows: Each <V> element contains exactly one X and one Y child element representing the position of

Example of exported .annotations file

The below image is an example of an image with four annotation layers. The first layer (Rectangles) contains positive and negative yellow rectangles. The second layer (Oval) contains one green oval. The third layer (Ruler) contains one ruler measurement of approximately 2mm. The final layer (Layer 3) contains one large polygon with the visibility toggled off.
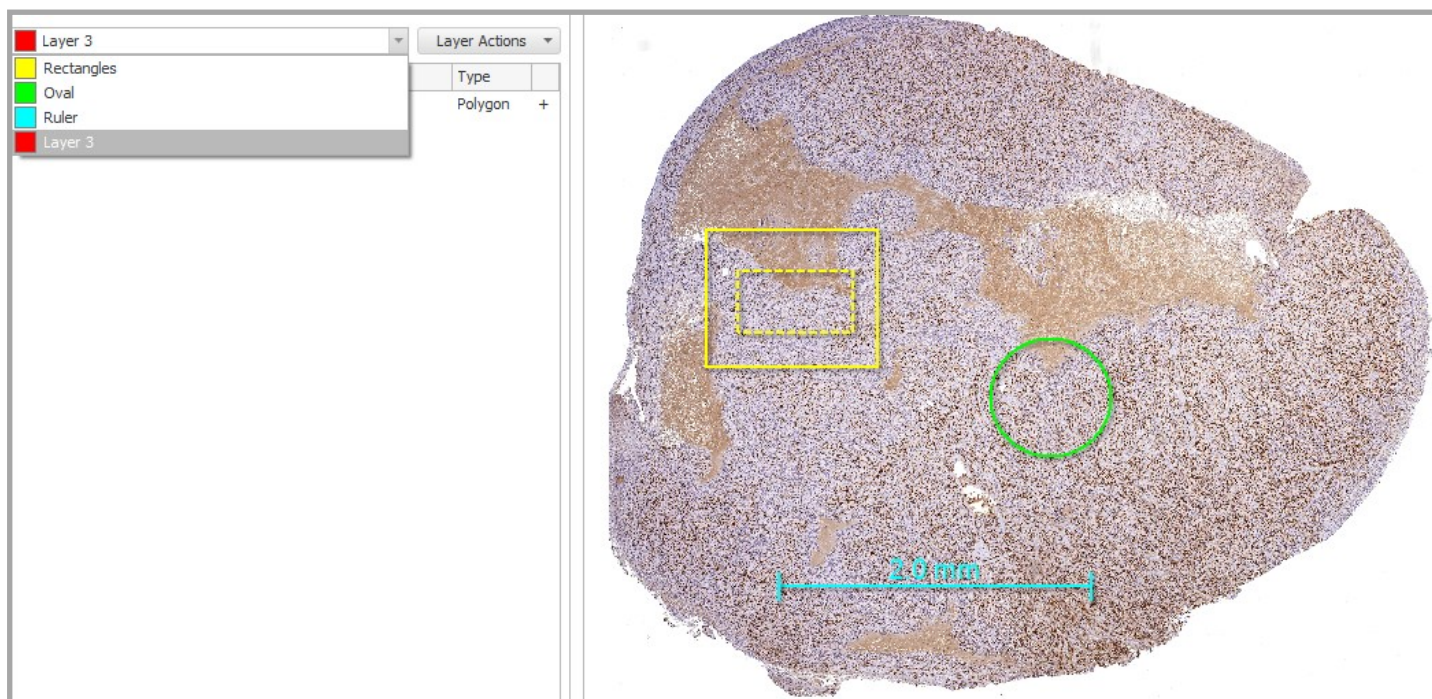

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<Annotations><Annotation LineColor="65535" Name="Rectangles" Visible="True"><Regions><Region Type="Rectangle"
HasEndcaps="0" NegativeROA="0"><Vertices><V X="1294" Y="2927" /><V X="3557" Y="4745" /></Vertices></Region><Region
Type="Rectangle" HasEndcaps="0" NegativeROA="1"><Vertices><V X="1710" Y="3459" /><V X="3228" Y="4281" /></Vertices></
Region></Regions></Annotation><Annotation LineColor="65280" Name="Oval" Visible="True"><Regions><Region Type="Ellipse"
HasEndcaps="0" NegativeROA="0"><Vertices><V X="5025" Y="4348" /><V X="6621" Y="5915" /></Vertices></Region></
Regions></Annotation><Annotation LineColor="16776960" Name="Ruler" Visible="True"><Regions><Region Type="Ruler"
HasEndcaps="0" NegativeROA="0"><Vertices><V X="2241" Y="7601" /><V X="6349" Y="7601" /></Vertices></Region></
Regions></Annotation><Annotation LineColor="255" Name="Layer 3" Visible="False"><Regions><Region Type="Polygon"
HasEndcaps="0" NegativeROA="0"><Vertices><V X="9276" Y="7066" /><V X="9274" Y="7067" /><V X="9216" Y="7087" /><V
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X="9012" Y="7181" /><V X="8942" Y="7234" /><V X="8941" Y="7235" /><V X="8928" Y="7239" /><V X="8886" Y="7269" /><V
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X="8690" Y="7390" /><V X="8637" Y="7433" /><V X="8635" Y="7434" /><V X="8611" Y="7439" /><V X="8566" Y="7472" />

…

<V X="10073" Y="6277" /><V X="10073" Y="6278" /><V X="10058" Y="6308" /><V X="10057" Y="6309" /><V X="9999" Y="6372" /
><V X="9991" Y="6394" /><V X="9990" Y="6397" /><V X="9956" Y="6426" /><V X="9949" Y="6445" /><V X="9948" Y="6447" /><V
X="9918" Y="6477" /><V X="9860" Y="6525" /><V X="9796" Y="6593" /><V X="9757" Y="6673" /><V X="9755" Y="6675" /><V
X="9727" Y="6692" /><V X="9719" Y="6705" /><V X="9602" Y="6843" /><V X="9599" Y="6844" /><V X="9586" Y="6848" /><V
X="9514" Y="6930" /><V X="9511" Y="6931" /><V X="9494" Y="6937" /><V X="9468" Y="6957" /><V X="9420" Y="6998" /><V
X="9419" Y="6999" /><V X="9368" Y="7018" /><V X="9367" Y="7018" /><V X="9339" Y="7024" /><V X="9310" Y="7034" /></
Vertices></Region></Regions></Annotation></Annotations>
```