

Smart Tracing

This Help file describes the means and tools of tracing - an interactive procedure that allows you to extract vectors from a raster image, and also to smooth or to delete raster entities.

The beauty of this method is that it combines your intuitive knowledge with the automatic conversion process, giving more control over vectorization results. At the same time, when tracing you can classify raster image objects by their significance and transform only those required.

What is tracing?

Tracing is based on the technology of local recognition of raster geometrical entities (lines, arcs, circles and polylines). When tracing, you specify the raster object, and the program, according to the selected tracing mode, generates approximate vector objects, and deletes or smooths the raster. The latest version allows you to trace even hatches and symbols.

Before starting

Before starting the tracing procedure, you need to set up the parameters that influence the tracing, such as the maximum width and minimum length of raster object to be recognized, the maximum gap size to be ignored, and the approximation level (low for poor images and high for good ones). To do that, go to Conversion Options and click the Options tab (figure one).

Then, from the four tracing modes you need to choose one, depending on whether you want to keep the raster and vector as the results of tracing, or keep only vector and delete raster, or just smooth or delete raster without producing vectors. As soon as you have done that, you may go ahead with the preferred tracing method.

Tracing Auto

You can use this method for tracing raster entities of four existing types - line, arc, outline and circle.

When tracing in automatic mode, you just need to choose a tracing mode, press the Trace Auto button on Raster to Vector toolbar and click somewhere on a raster object. The program automatically selects the closest vector analogue.

For better translation results, don't forget to set up Approximation Accuracy parameter, which defines the accepted level of deviation of the real raster form from ideal one.

Don't be afraid to break the raster on the point of its intersection with the other object - intersections with other objects are kept intact.

Forced Tracings.

You can use this method for tracing of the distorted objects. By clicking the correspondent button (Trace Line, Trace Arc, Trace Circle), you give the software direction to follow.

Tracing Hatch

This sort of tracing allows you to trace a single raster hatch, consisting of raster straight lines with the same angle and limited by the closed raster outline.

To trace a hatch, go to Raster to Vector toolbar, click Trace Hatch Button and draw a polyline crossing all lines of the raster hatch. The program finds the boundary of the hatched area and creates a hatch

Tracing Polylines

When tracing in this mode, you specify a point on raster line, and the program tracks this line up to the nearest nodes, intersection points and creates an approximating vector line that consists of vector lines and arcs - a polyline. After each tracing step you should choose the direction for further tracing, or you can turn on the auto detection mode of tracing direction (Trace tab in Conversion Options) and the software automatically will choose a direction for you. You can redo the latest tracing step. You can draw a linear segment of polyline. You can zoom the image to show the last added polylines vertex on the screen centre. Just click the right button of mouse and select the required option (figure four).

You can also use the orthogonalization mode, which allows you to align obtained vector objects by the base angle. In this mode the program will generate a vector line consisting of segments perpendicular and parallel to the direction specified by you or automatically defined by the software (figure five).

Tracing Symbols

The Symbol method of tracing allows tracing by picking raster objects similar to previously defined vector blocks. Using this method you can vectorize the notation conventions on the scanned electrical, hydraulic schemes, maps and similar images (figure six).

Please visit Rastertech web site www.rastertech.com.au for more information.



Figure four

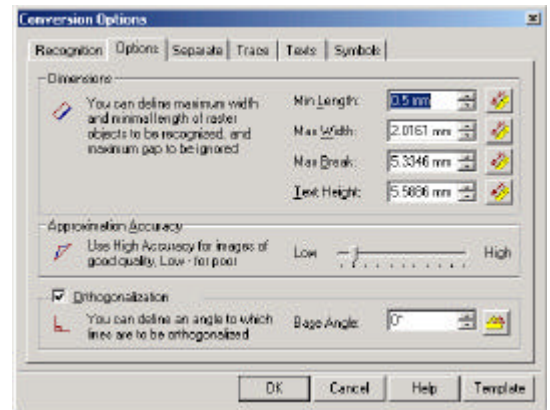


Figure one: Tuning tracing parameters

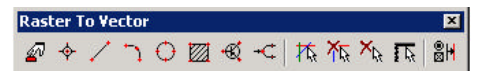


Figure two: raster to vector conversion toolbar

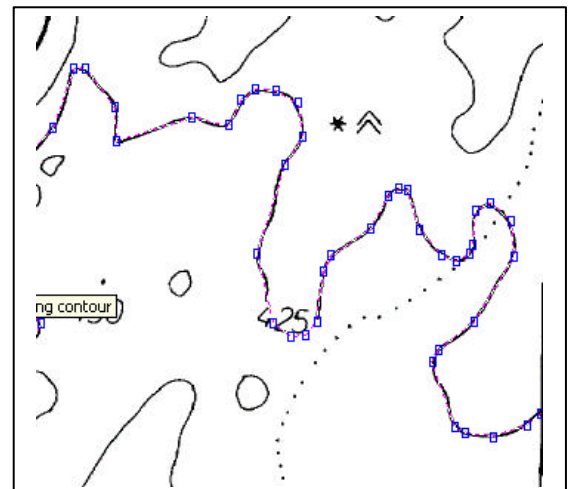


Figure three: Line following tracing

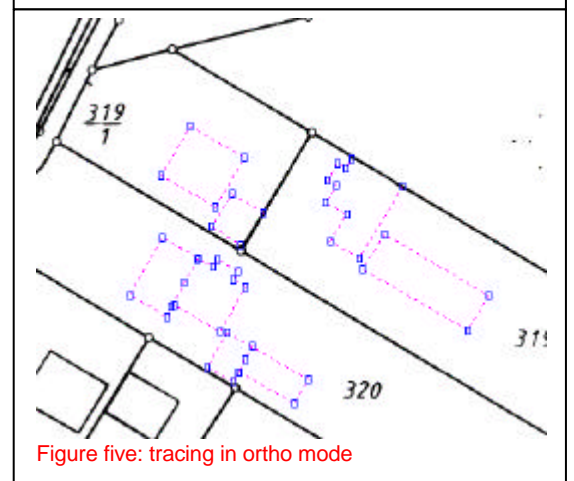


Figure five: tracing in ortho mode

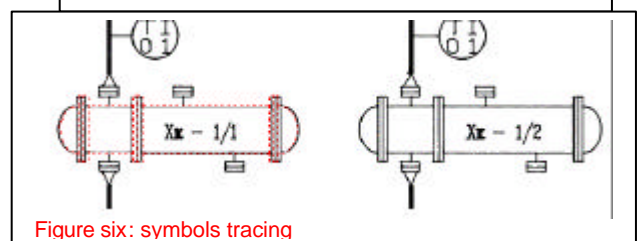


Figure six: symbols tracing