



ZWVectorization Tool

PRODUCT RELEASE NOTES

THE ZWSOFT TEAM

ZWSOFT | 2025/11/8

Welcome to ZWVectorization Tool!

Dear friends,

After extensive market research and customer feedback analysis, ZWSOFT has officially launched the **ZWVectorization Tool**. This plugin, designed to run on ZWCAD, enables quick conversion of raster images into vectorized drawings. For detailed product information, please refer to this document.

Yours sincerely,

The ZWSOFT Team

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ZWVectorization Tool

Version number: 1.1

1. Overview

The ZWVectorization Tool is a plugin that quickly converts raster images (such as photos or scans) into DWG drawings. In addition to geometry recognition, it also supports precise text recognition within the images.

By using this tool, designers can efficiently and accurately convert image files into DWG drawings, eliminating the need for manual redrawing and significantly improving productivity.

2. Installation & Activation

2.1 System Requirements

	Minimum System Requirements	Recommended System Requirements
Operating System	Microsoft® Windows 7 SP1 Microsoft® Windows Server 2008 R2 SP1 and above Microsoft® Windows Server 2012 Microsoft® Windows Server 2016 Microsoft® Windows 8.1 Microsoft® Windows 10 Microsoft® Windows 11	Microsoft® Windows 10 Microsoft® Windows 11
Processor	Intel® Pentium™ 4 1.5 GHz or equivalent AMD® processor	Intel® Core™ i5-10400 or AMD® Ryzen™ 5 3600 CPU or higher
RAM	2 GB	8 GB or more
Graphics Card	1 GB, support OpenGL 4.2	2 GB or more, support OpenGL 4.2 or higher, NVIDIA® GeForce™ GTX 1060 or AMD® Radeon™ RX 580 Series or higher
Hard Disk	2 GB free space in OS disk, 2 GB free space in installation disk	4 GB free space in OS disk, 2 GB free space in installation disk
Resolution	1024*768 VGA with True Color	1920*1080
Pointing Device	Mouse, trackball, or other devices	Mouse, trackball, or other devices
DVD-ROM	Any speed (for installation only)	Any speed (for installation only)

Figure 1. System Requirements

2.2 How to Install

STEP 1

Install ZWCAD 2025 or a later version. Please refer to the [<ZWCAD 2025 Quick Start Guide>](#) for more guidance.

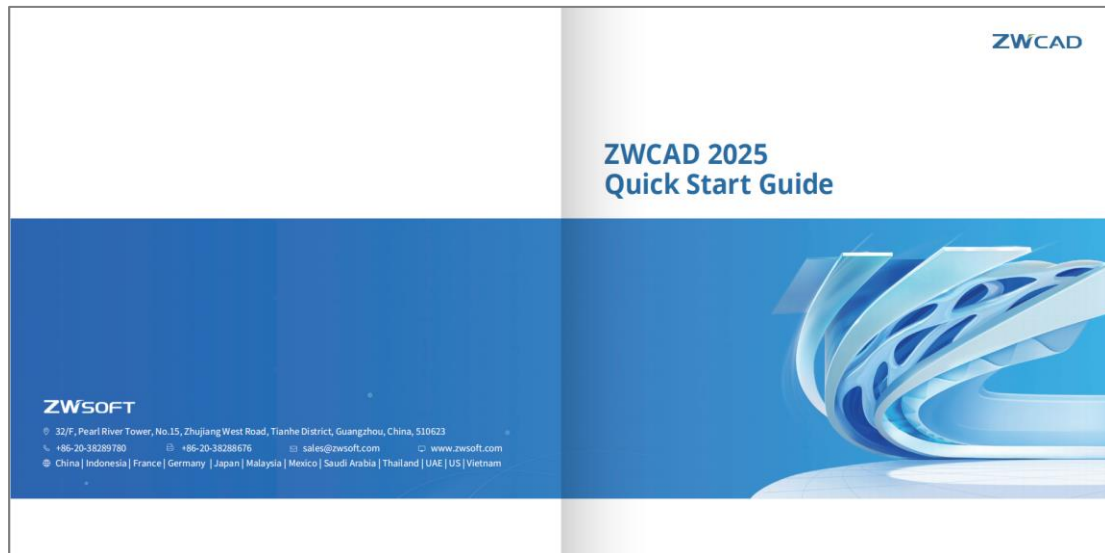


Figure 2. Complete the installation of ZWCAD following the guide.

STEP 2

Install the ZWVectorization tool, choose the setup language and specify the installation path and click [Continue].

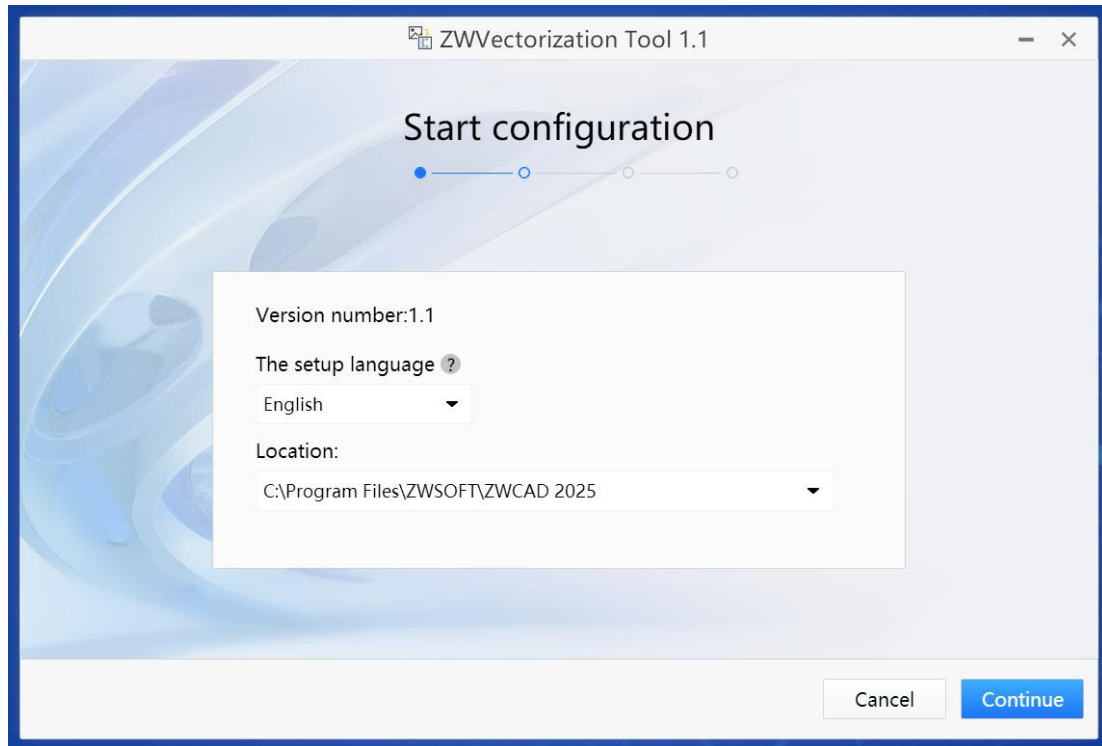


Figure 3. Launch the plugin installer and select the installation path.

STEP 3

Scroll down to read all terms and conditions, and click [Agree and Install].

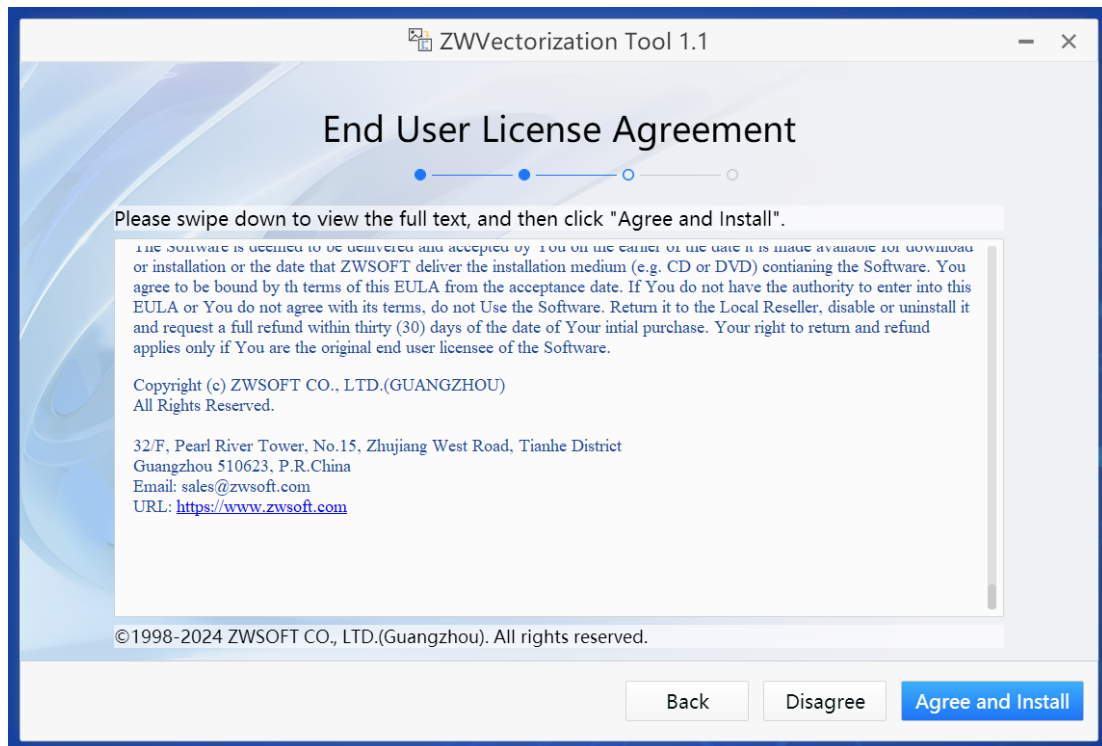


Figure 4. Read the [End User License Agreement] and continue.

STEP 4

Click [Done] to complete the installation.

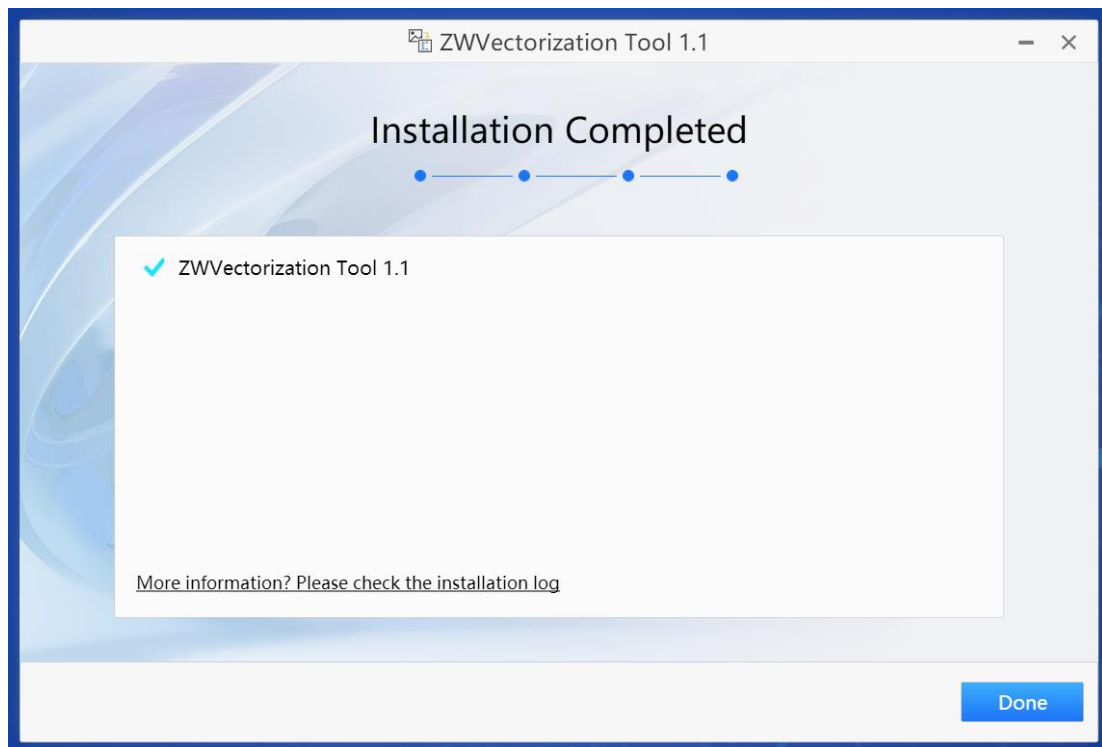


Figure 5. Complete the plugin installation

2.3 How to Activate

STEP 1

Launch License Manager from the Windows Start Menu.

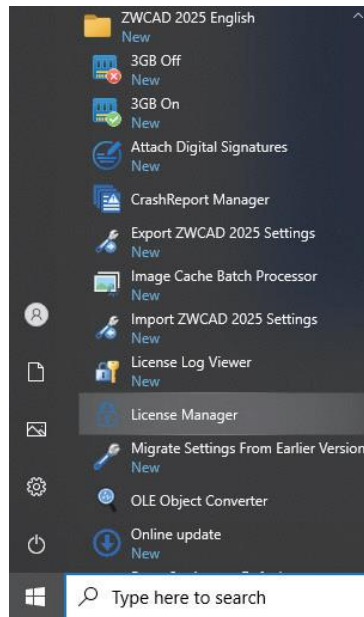


Figure 6. Open the License Manager

STEP 2

Make sure that ZWCAD's license is activated before activating the ZWVectorization Tool. If it is not, refer to the [<ZWCAD 2025 Quick Start Guide>](#) for assistance. Click [Activate License] after ZWCAD is activated.



Figure 7. Make sure you already activated ZWCAD before activate the plugin

STEP 3

- > Click [Online Activation]
- > Enter the license code.
- > Click [Activate].
- > Click [Done] to complete the installation.

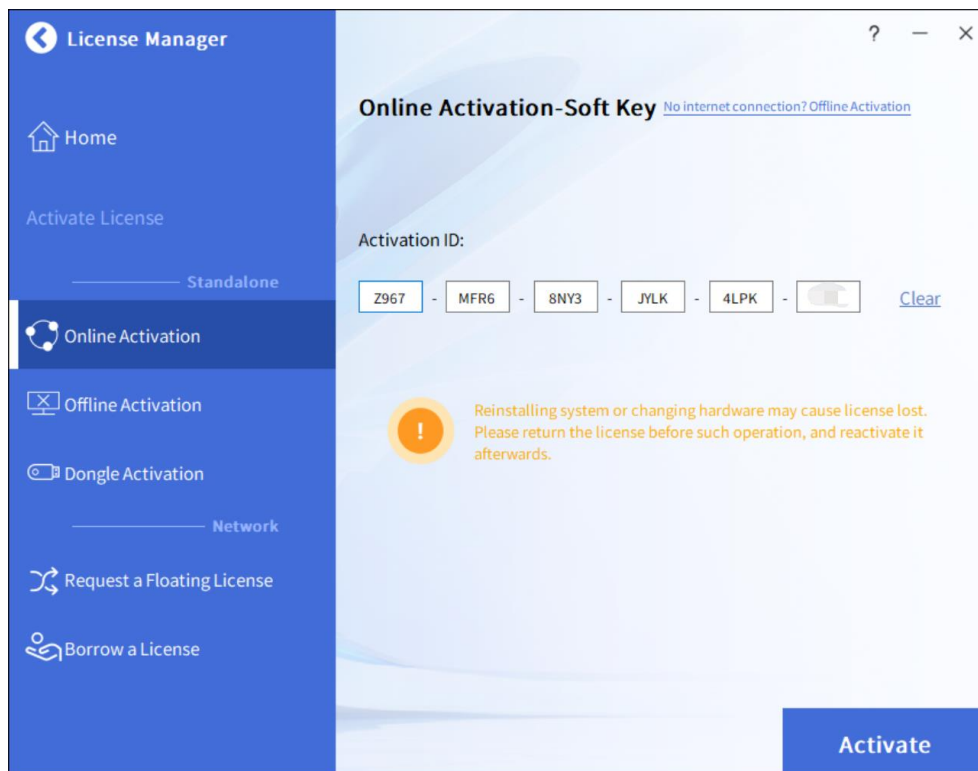


Figure 8. Input plugin's license code

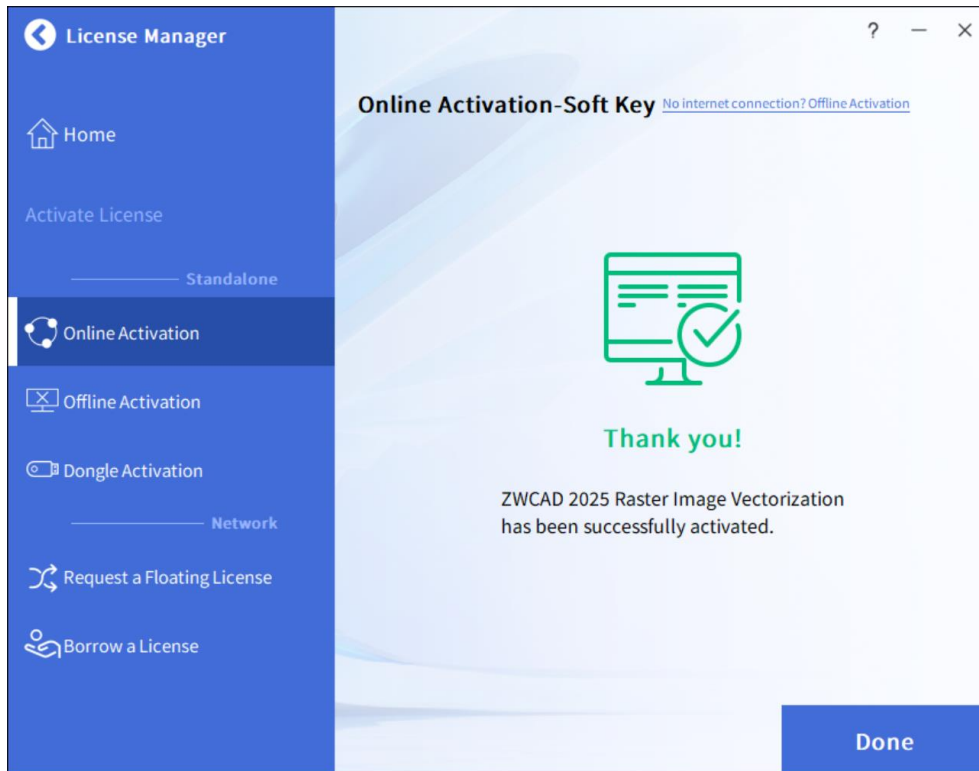


Figure 9. Activation complete.

STEP 4

Once the activation is finished, you can see the license information in the License Manager.



Figure 10. After successful activation, the panel will display the plugin's license information.

3. Features

3.1 Vectorization

Select an image and convert it to a CAD drawing. In addition to geometry, this tool can recognize the text within the image and convert it to text rather than lines. There are 3 ways to launch the feature:

- 1) Execute “ VECTORIZATION” in the command line.

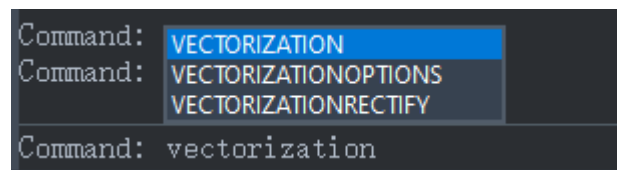


Figure 11. Launch feature from the command line

- 2) Select the “Vectorization” button in the Ribbon.

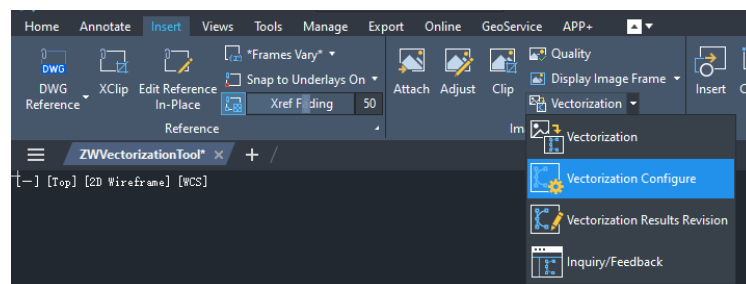


Figure 12. Launch feature from the Ribbon

- 3) Select the “Vectorization” button in the Tools tab of the Classic menu.

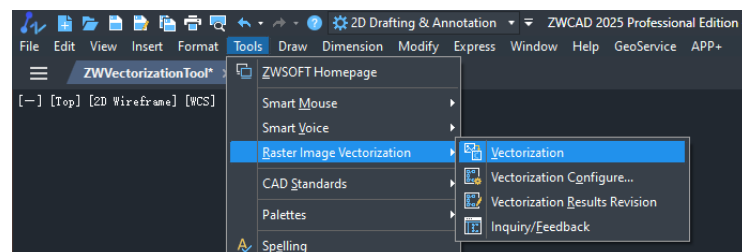


Figure 13. Launch feature from the menu

After the drawing conversion is complete, you can choose to modify specific details of the drawing or review the conversion results before modification. An introduction to the modification feature will be

provided in the following section.

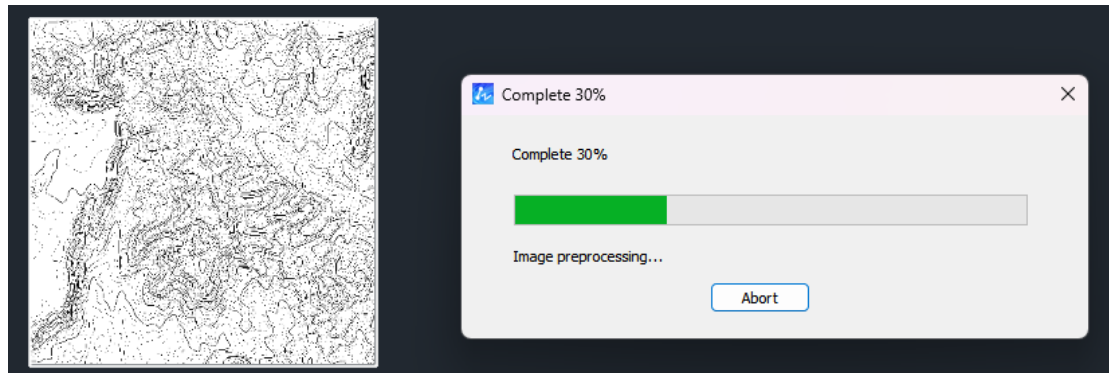


Figure 14. Process of conversion

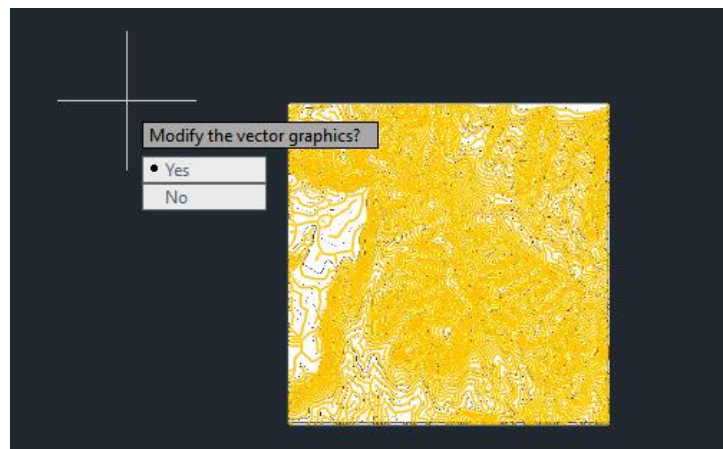


Figure 15. Choose whether to modify the drawing after completing the conversion.

3.2 Vectorization Results Revision

Modification Startup

After the drawing conversion is complete, the software will prompt you to determine if modifications are needed. You can directly modify the drawing here.

- 1) To modify the drawing using the modification command, you can either enter "VECTORIZATIONRECTIFY" in the command line or select the corresponding button in the Ribbon/Classic menu to activate the command.

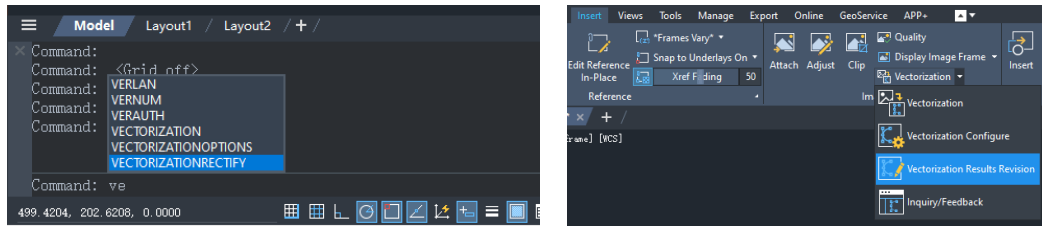


Figure 16. Launch the editing feature

Modification Mode

There are 3 options to modify the drawing:

Break: Select a point to break the object into 2 separate parts.

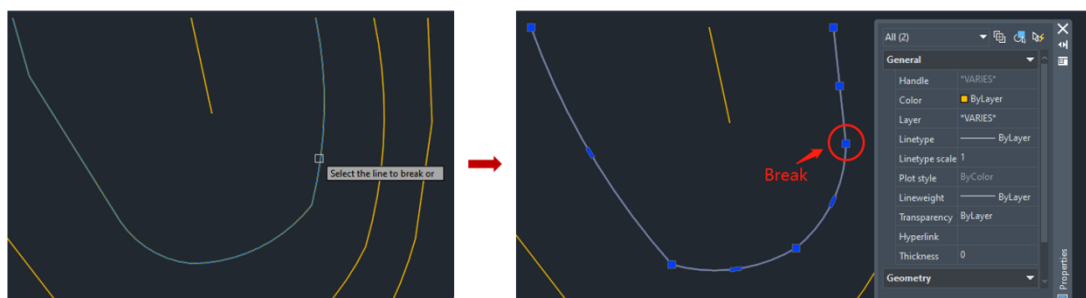


Figure 17. Select a point to break the line.

Connect: Connect the endpoints of two vector objects to make them one object.

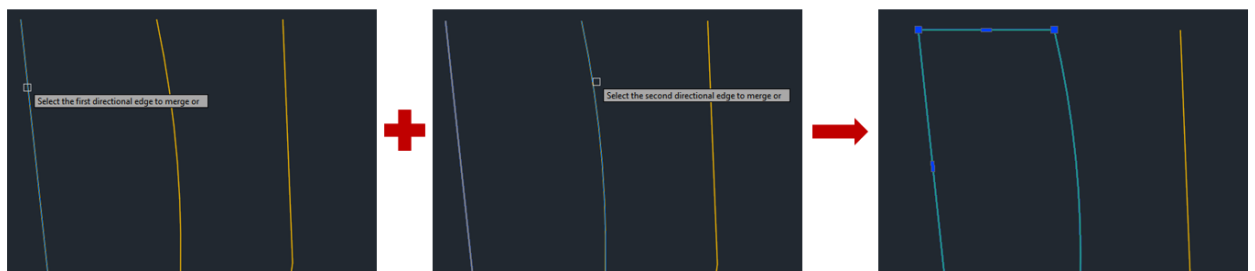


Figure 18. Select 2 objects and their endpoints will connect.

Merge: Select 2 objects to merge. If there are no intersection points between the objects, it will use the “Connect” option to connect them.

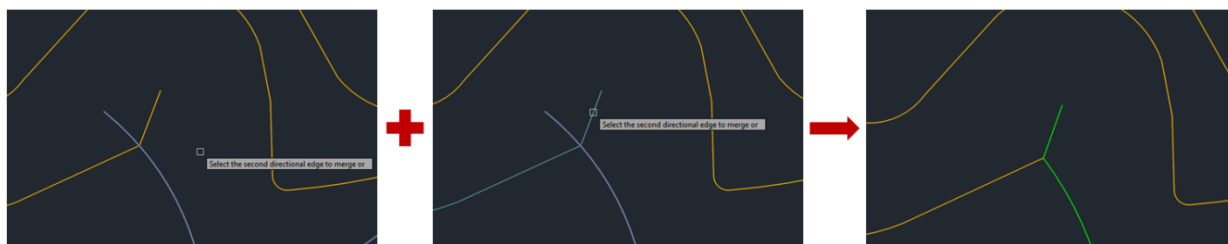


Figure 19. Select 2 objects to merge.

3.3 Vectorization Configuration

To support various drawing conversion scenarios, ZWVectorization Tool offers a wide range of parameter settings to ensure the converted drawings remain consistent with the original images.

Configuration Manager

Users can save the configured parameters as individual schemes, allowing them to select the appropriate conversion scheme based on their actual needs when converting drawings.

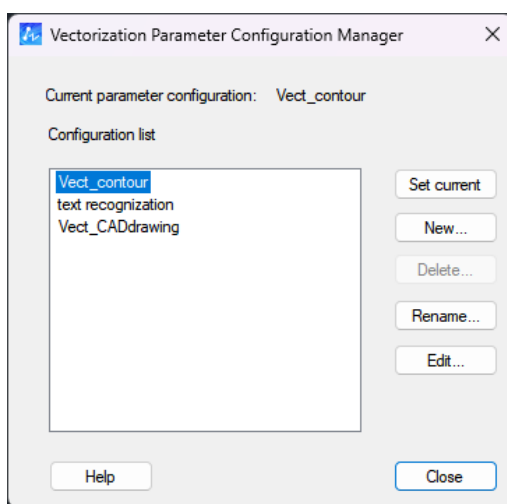


Figure 20. Setting different schemes according to different scenarios.

Each button functions are as follows:

Set Current: Choose a scheme and set it as the current scheme.

New: Create a new scheme.

Delete: Delete a selected scheme.

Rename: Rename a selected scheme.

Edit: Enter the parameters setting panel to edit the selected scheme.

General

In general panel, users can set different conversion parameters based on the type of image. Below are description of the function of each parameter:

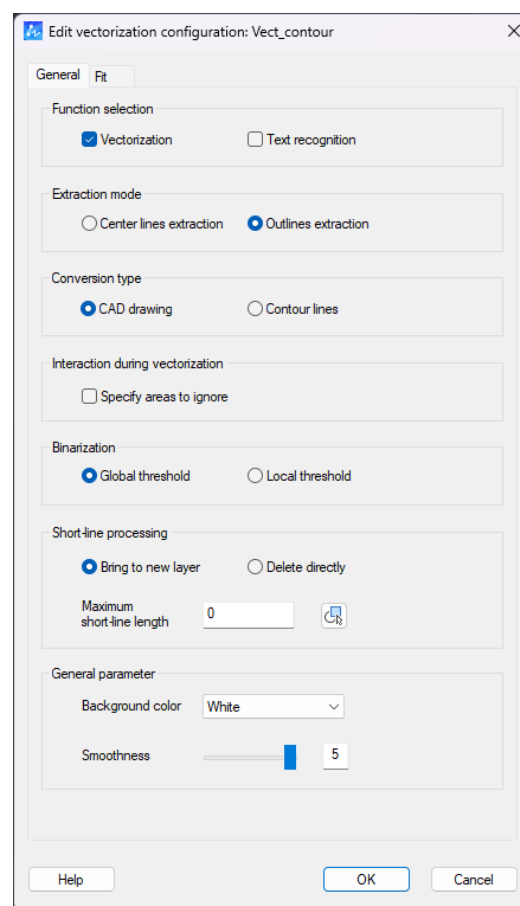


Figure 21. The general panel

【Function selection】^①

Vectorization: When this option is checked, raster images will be

^① ZWCAD does not include this feature by default; an additional plugin must be installed to use this option.

converted to CAD objects.

Text Recognition^②: When this option is checked, the text in the image can be recognized and converted into text.

When both options are checked, text will be preferentially recognized as text and converted if there is text in the image.

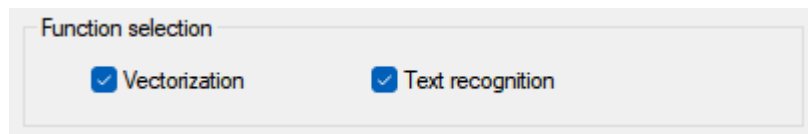


Figure 22. If both options are selected, text recognition is performed by default.

【Extraction mode】

Center lines extraction: Check this option when the image to be converted is a mechanical part or topographic map.

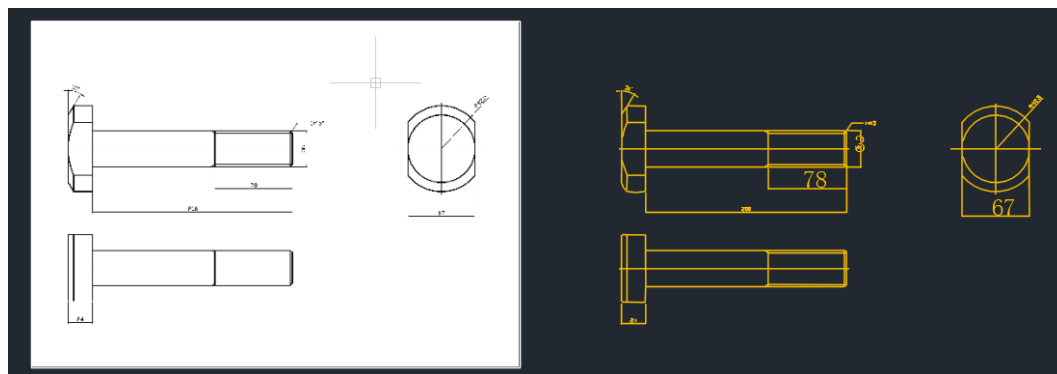


Figure 23. Effect of selecting “Center lines extraction”

Outlines extraction: Check this option when you need to extract the outer lines in the image.

^② The text recognition feature supports recognizing Chinese, English, punctuation marks, and numbers, and converts them into text objects in CAD

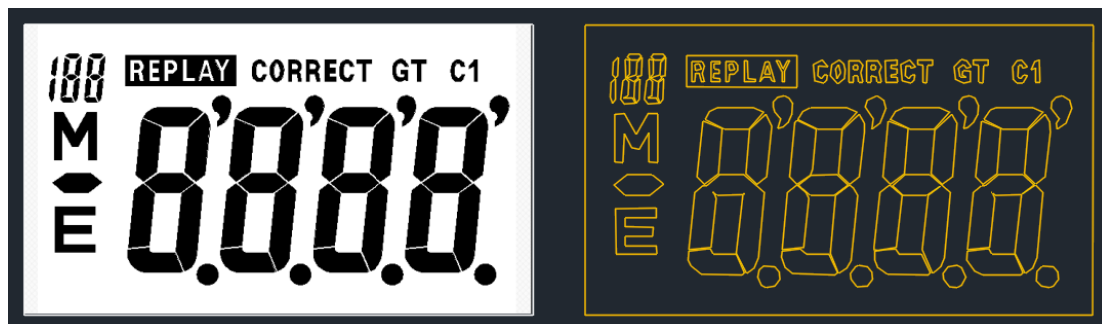


Figure 24. Effect of selecting "Outline extraction"

【Conversion type】

CAD drawing: Check this option for all non-topographic maps. (This option is available only when the extraction mode is center lines extraction.)

Contour lines: Check this option for topographic maps. (This option is available only when the extraction mode is center lines extraction.)

The lines generated in both modes are placed on different layers according to the different line types.



Figure 25. The converted line segments are automatically created on different layers.

【Interaction during vectorization】

Specify areas to exclude: Select the specified area that you don't want to

convert in the image.

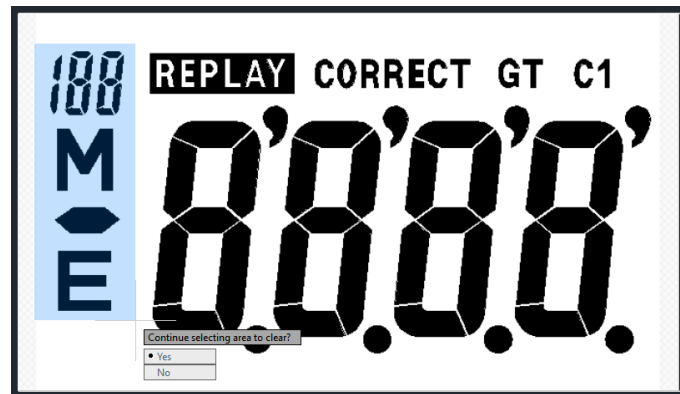


Figure 26. Select areas to exclude.

【Binarization】

Global threshold: Select this option when the image is sharp and the lines are clear.

Local threshold: Select this option when the image has a low resolution or contains dense lines (such as photos of drawings, low-resolution scans).

【Short-Line Processing】

Short line is a line consisting of fewer pixels in the image, and users can customize the length range of short lines.

Bring to new layer: Line segments that match the definition of short lines will be created in a layer called “Discarded”. (This option is available only when the extraction mode is center lines extraction.)

Delete directly: Lines that meet the definition of a short line will be deleted directly after conversion. (This option is available only when the extraction mode is center lines extraction.)

Maximum shot-line length: The user can specify the length of short lines by entering a numerical value or specifying 2 points on the model space.

【General Parameter】

Background color: Select the color of the converted drawing.

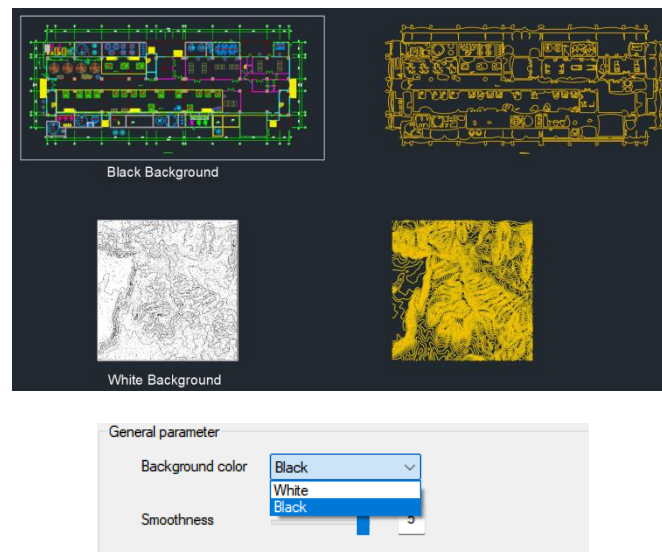


Figure 27. Choose the background color.

Smoothness: Set the smoothness of the connection of two line segments. The higher the value, the smoother the conversion at the connection.

Fit

In different scenarios, users may need to specify the converted CAD object types, so in this panel you can set the CAD object type that will be generated when the image is converted. Below are description of the function of each parameter:

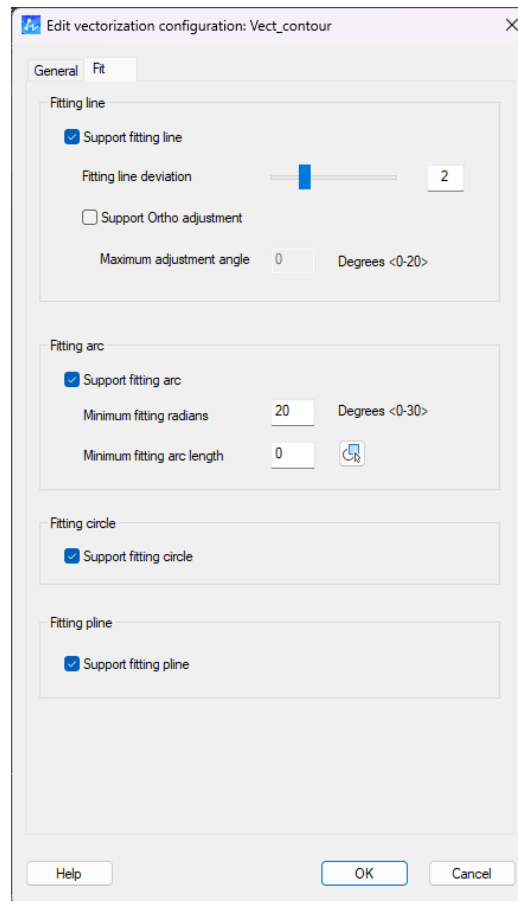


Figure 28. the Fit panel

【Fitting line】

Support fitting line: A fitting method for converting raster images into lines

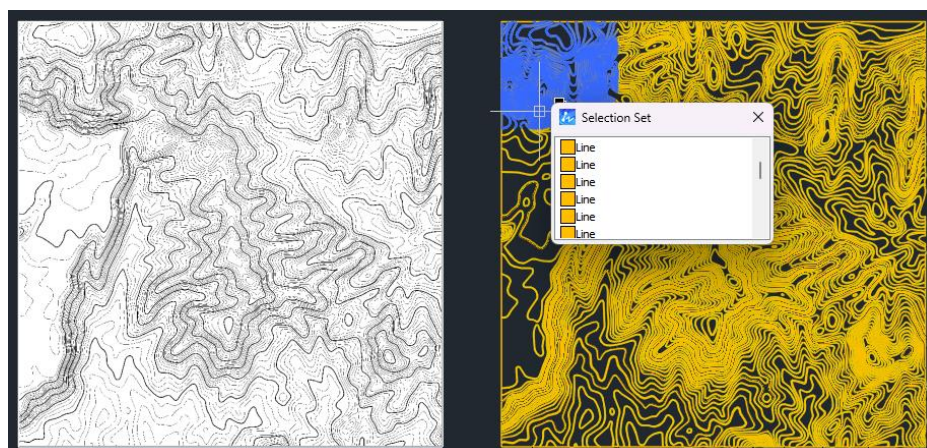


Figure 29. The image will be converted to lines

Support Ortho adjustment: It supports automatic recognition and correction of orthogonality between lines during image conversion. When

a drawing is converted to a scan or picture, the two lines that were originally in the orthogonal state may be offset. This function can correct the offset problem.

Maximum adjustment angle: Set the maximum adjustment angle. The value ranges from 0 to 20°. Objects with a tilt Angle less than this value will be fitted as horizontal or vertical vectors.



Figure 30. Set the max angle value that allows correction

【Fitting arc】

Support fitting arc: A fitting method for converting raster images into arcs

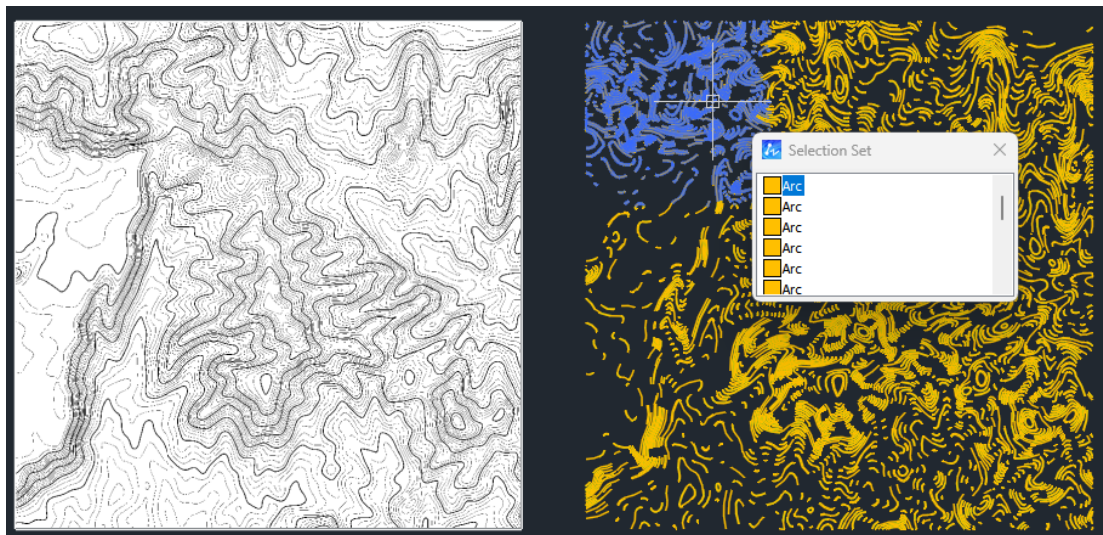


Figure 31. The image will be converted to arches

Minimum fitting radian: When the converted arc radians are lower than the preset value, the arc length will be automatically converted into a line. Users can customize the preset arc radians.

Minimum fitting arc length: When the converted arc length is lower than the preset value, the arc length will be automatically converted into a line.

Users can customize the preset arc length.

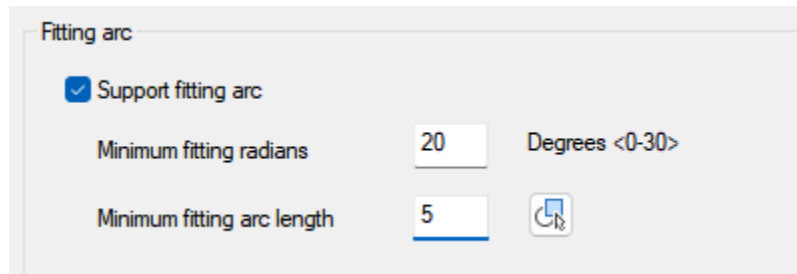


Figure 32. Set the minimum arc radians and length.

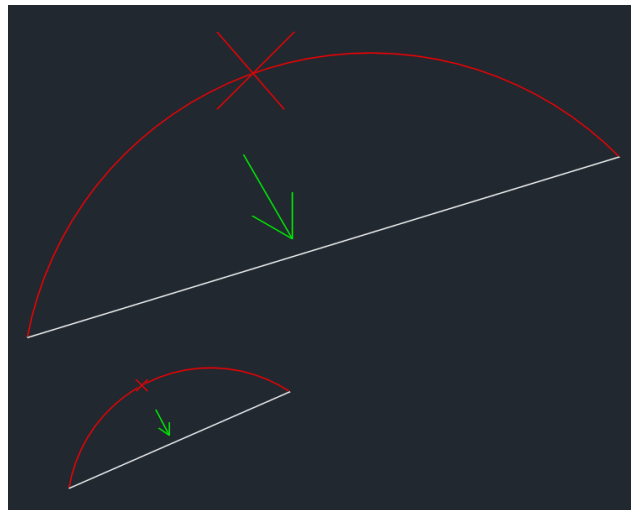


Figure 33. Arcs less than the preset arc radians and arc length are automatically converted to lines

【Fitting circle】

Support fitting circle: A fitting method for converting raster images into circles

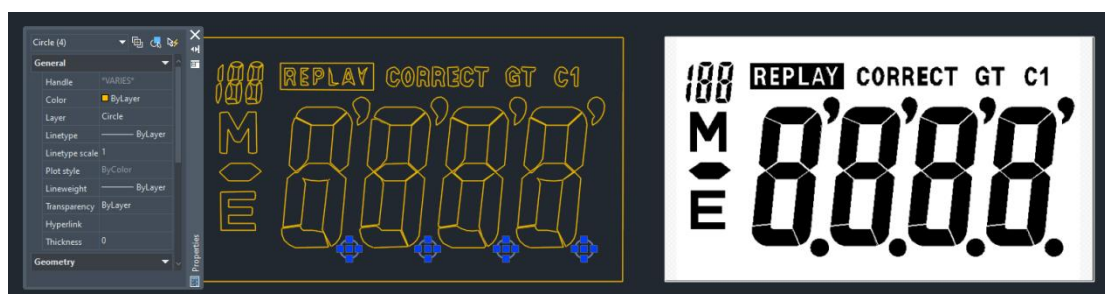


Figure 34. The image will be converted to circles

【Fitting Pline】

Support fitting Pline: A fitting method for converting raster images into Polyline

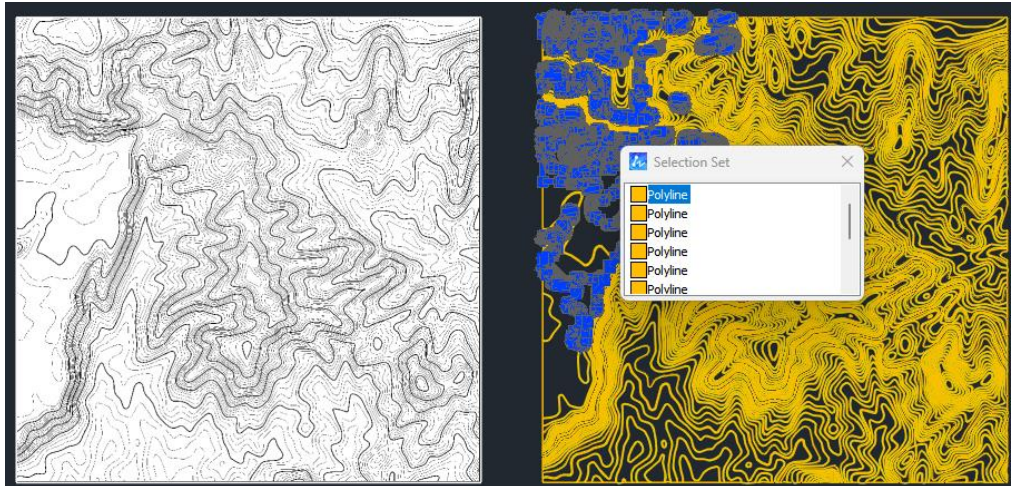


Figure 35. The image will be converted to polylines

OCR

This panel appears only when “text recognition” is selected and is used to set parameters related to text conversion. Below are description of the function of each parameter:

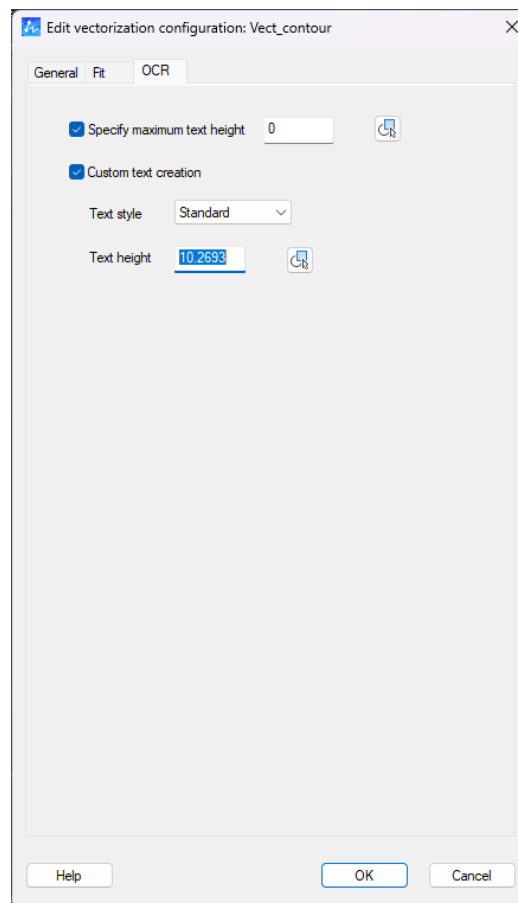


Figure 36. the OCR panel

【Specify maximum text height】

Specify the maximum recognizable text height above which it will not be recognized as text. You can set the number or specify the height in the workspace.

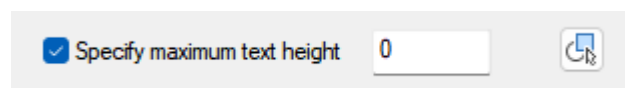


Figure 37. Text that exceeds the preset maximum value will not be recognized as text.

【Custom text creation】

Text style: Set the converted text style, which is associated with the text style manager.

Text height: Set the font height of the converted text, You can set the number or specify the height in the workspace.

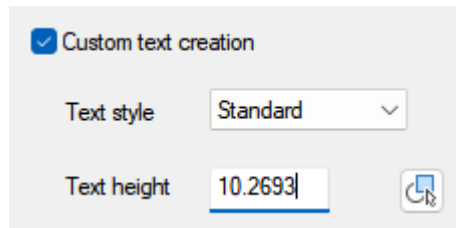


Figure 38. Set the style of the converted text

4. New Commands

New Command	Descriptions
VECTORIZATION	Convert the objects in the selected raster image to vector graphics.
VECTORIZATIONOPTIONS	Set up raster image vectorization configuration.
VECTORIZATIONRECTIFY	Merge, break, or connect extracted vector objects.