AUCOTEC
Create Synergy – Connect Processes

Engineering Base

Shape Optimization

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1 Introduction

Simple shapes (e.g. Capacitors) can be placed easily and quickly via Drag & Drop from EB Stencils on a sheet or can be edited as needed in Visio.

For more complex shapes with many single elements (graphics) - such as Cable ducts, Connector Assemblies - the handling can be slow. This may be the case if the shape was created from a DXF file. Imported shapes are often assemblies of numerous dots and lines which enlarge the complexity of the shapes. The lower the number of elements which the shapes consist of, the faster becomes the placing and editing of them. For this reason it makes sense to simplify very complex shapes. This can be achieved by an optimization.

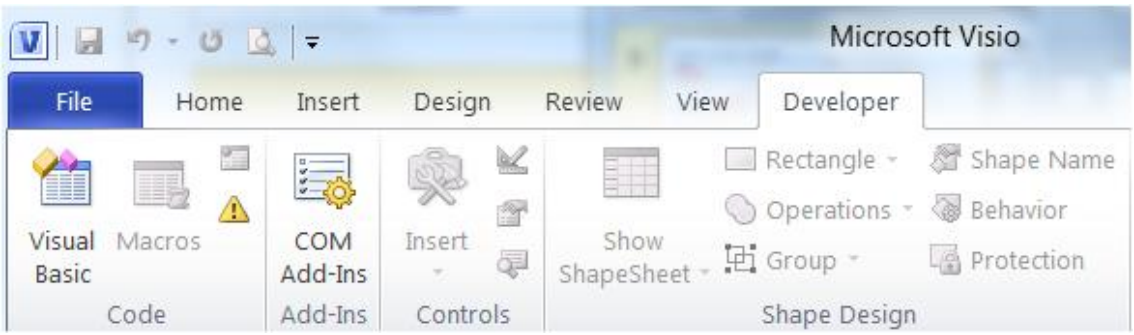
2 Optimization

The higher the number of elements in a shape, the slower will be editing and positioning of it. For sheet processing it is very advantageous if the number of elements (lines, points etc.) in the shapes is low.

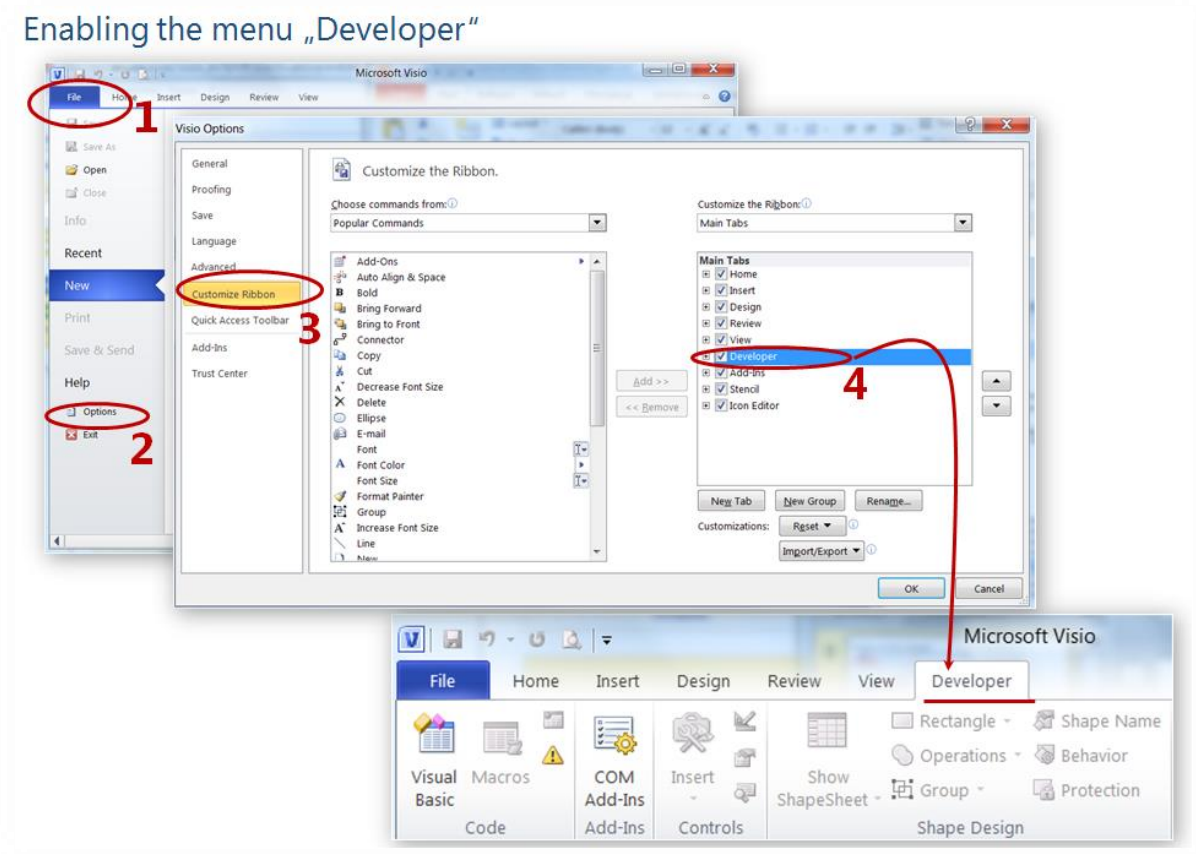
The operations described here are a way that may be considered only if MS Visio license is available, since the licenses provided by AUCOTEC AG are only to be used within Engineering Base. The optimization is carried out through the **Joining** feature in the standard MS Visio.

How can the number of shape elements be determined?

1. Open a Visio-sheet outside of Engineering Base and enable the menu **Developer**

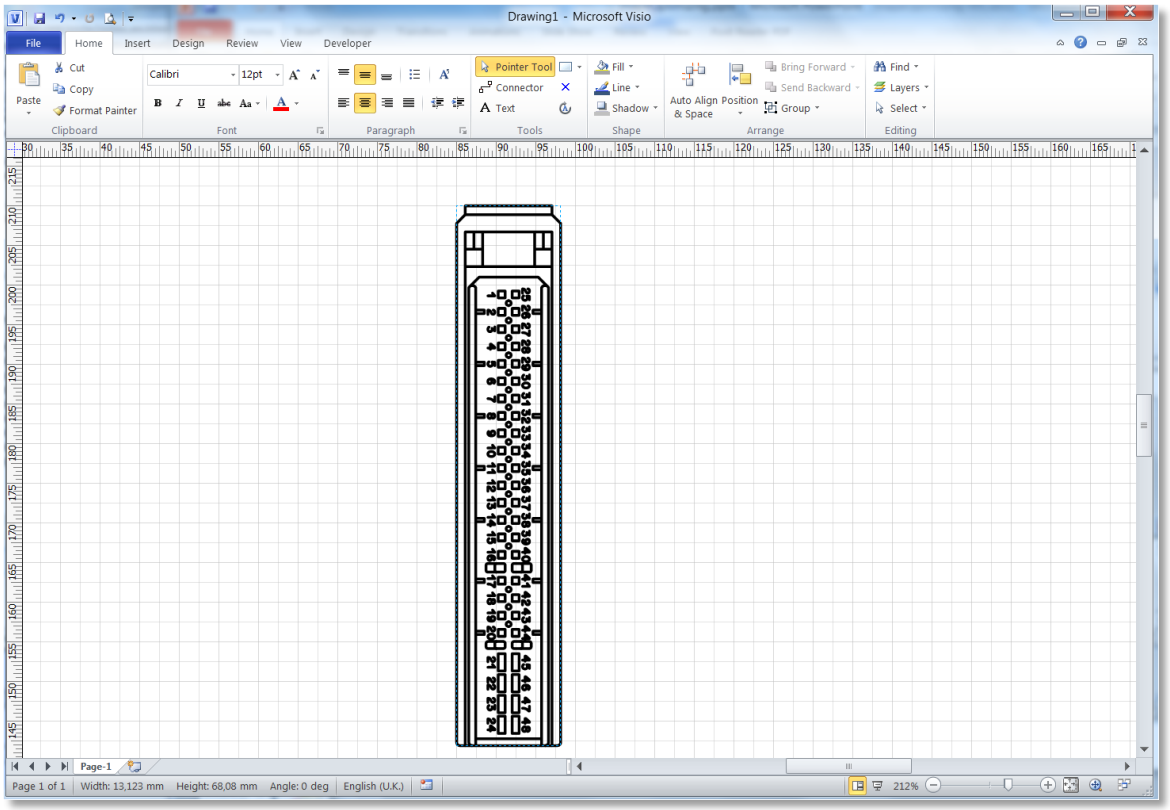


If the menu **Developer** is not active, follow the steps 1-4 to enable it (see the picture below).



2. Start EB. As Engineering Base always opens the integrated MS Visio when it is started there will be two separate MS Visio Versions stated in parallel!

3. Select and place the shape which shall be optimized from the EB stencils on the Visio sheet via Drag & Drop.

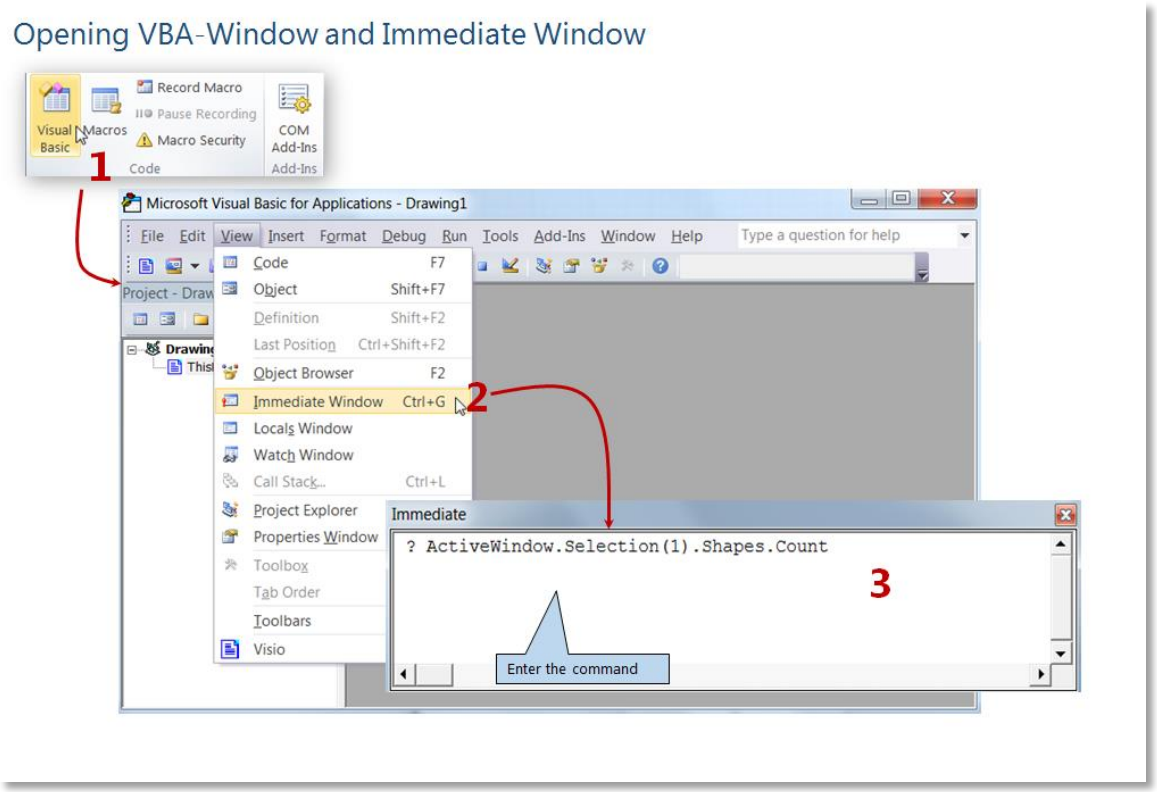


4. Open the VBA-Window and the Dialog Immediate (click **Immediate Window** in the View tab), enter the following command

   ? ActiveWindow.Selection(1).Shapes.Count

- The shortcut **Alt-F11** opens the VBA-Window.
- The shortcut **Ctrl-G** opens the Immediate Window.

The steps 1-3 (see the picture below) show how to open the windows mentioned above.

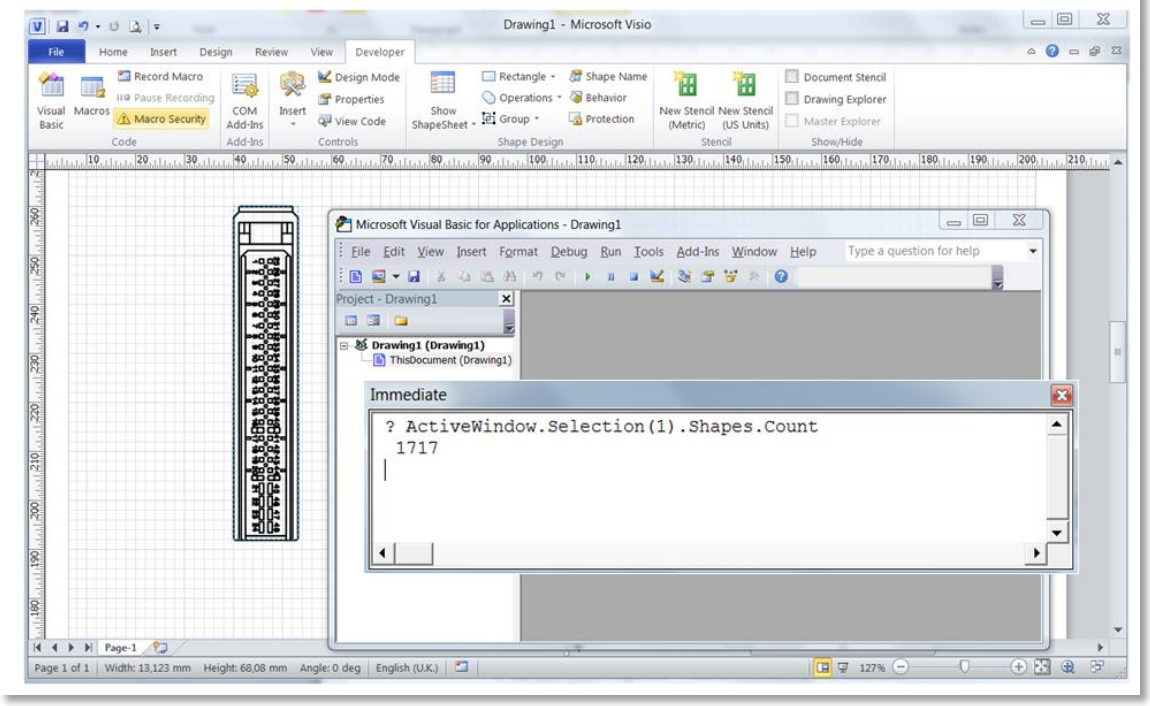


The command counts all elements of the selected shape.

After selecting the shape and executing the command, the whole elements of the shape will be counted and displayed in the Immediate Window.

The example in the picture below shows that the shape consists of 1717 elements.

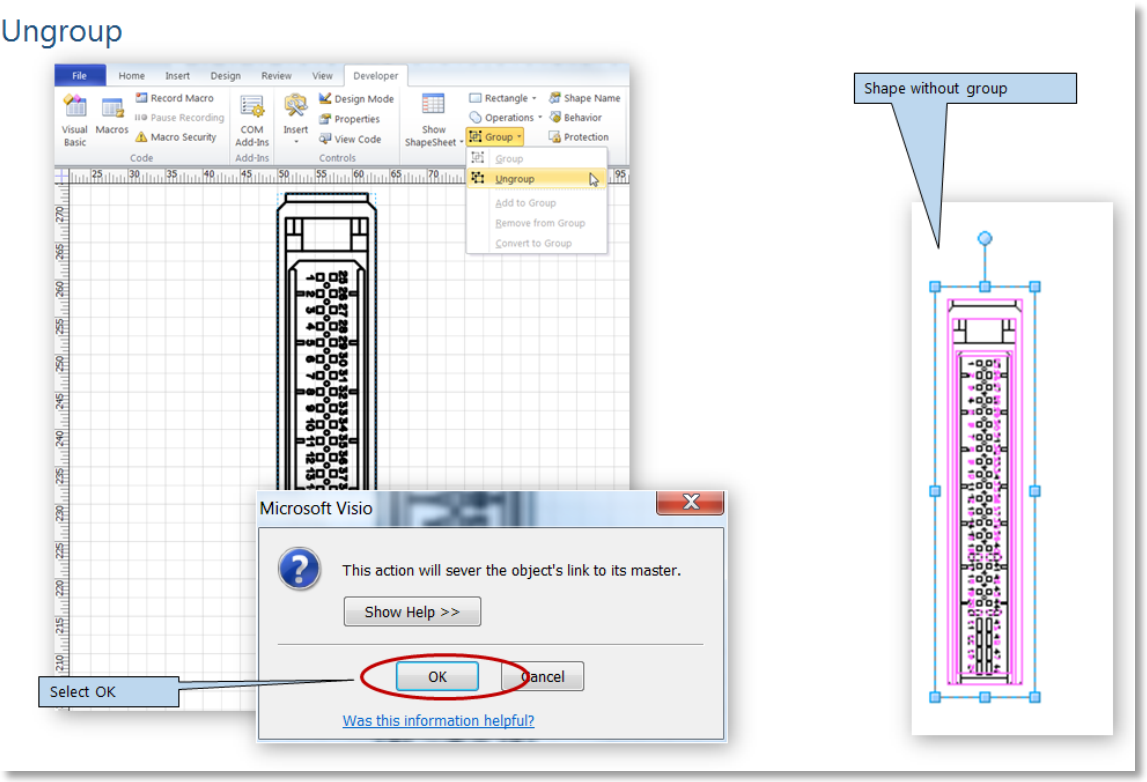
Example of counting



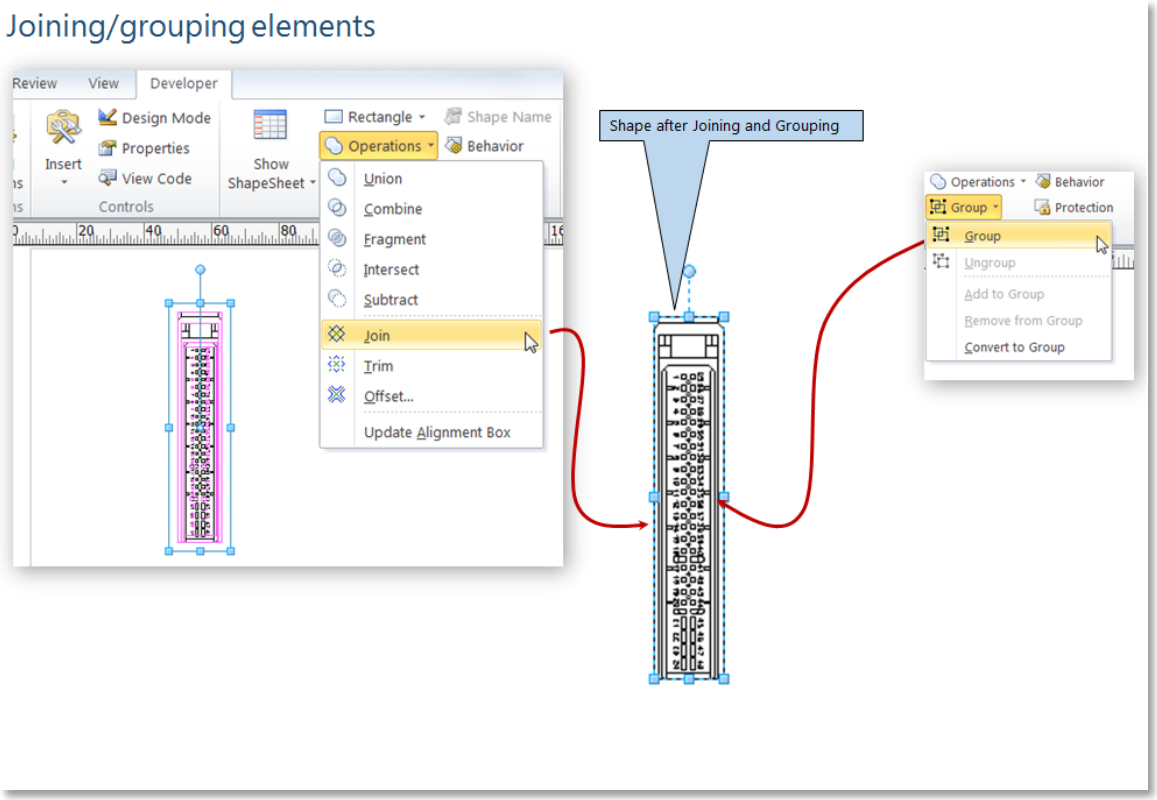
How to reduce the number of shape elements?

1. Ungroup the selected shape

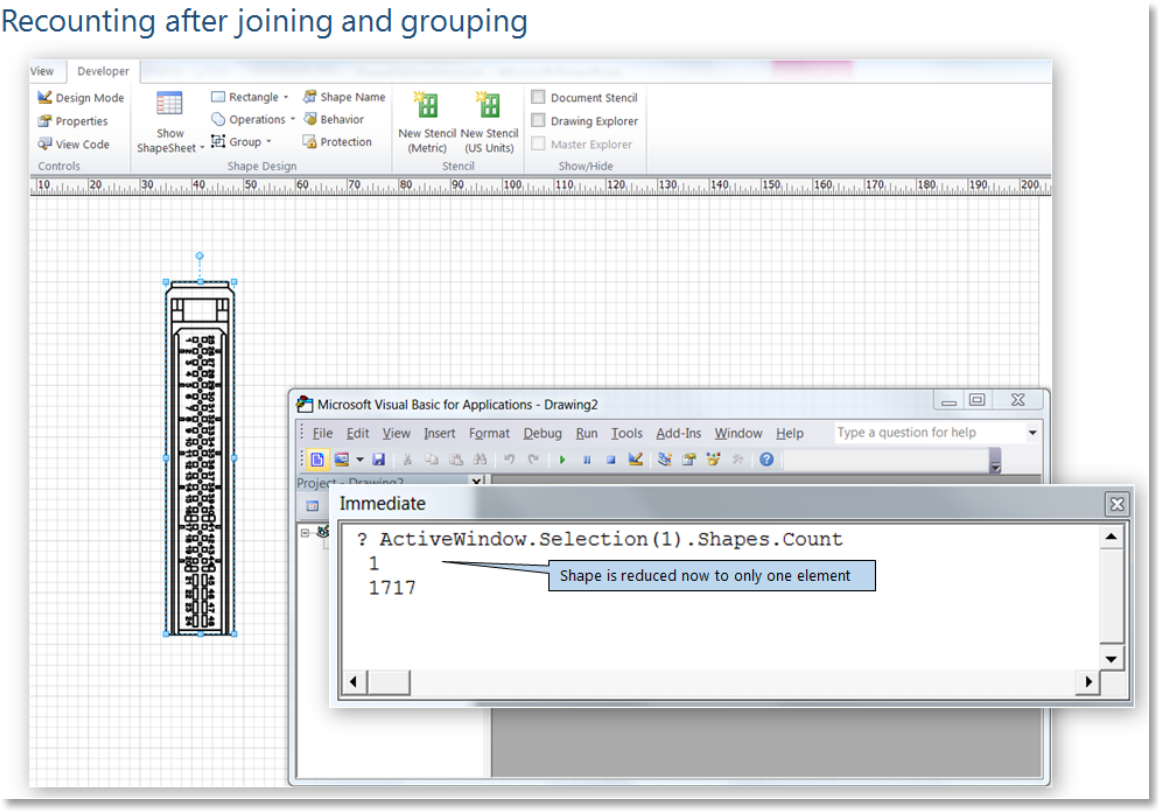
Ungroup



2. „Join" the single elements.
3. After that „group" the whole shape again



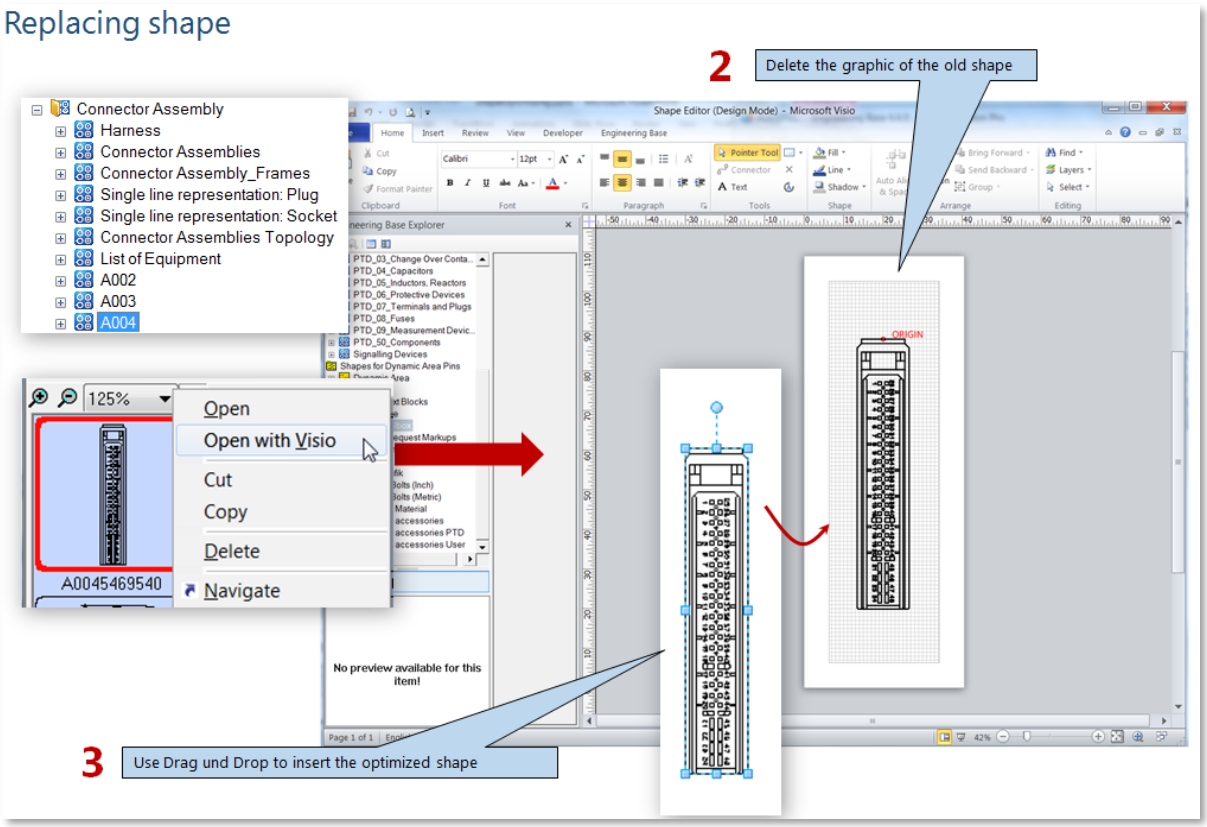
4. Count again to check the result



Depending on the shape range, it may happen that the shape elements can’t be joined in one step. In such cases the elements can be joined step by step until the whole shape is processed. It is not possible here to reduce to only one element; however, the complexity of the shape will be strongly reduced.

3 Replacing shape

To transfer the optimization into EB, the original shape should be replaced with the optimized one. The steps 1-3 (see picture below) show the process.



1. Closing the Shape editor and saving it saves the optimized shape in EB.
2. Now the version of the optimized shape should be increased so it can be updated in the EB Projects.