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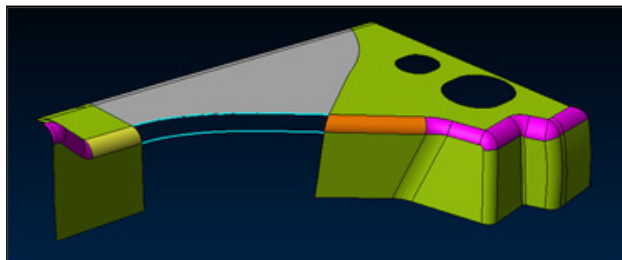
Hints & Tips

For this newsletter we will take a look at some of the common questions asked where answers are not so obvious. During the training courses, many of these questions are explained but for those who have been unable to attend....

Edge Simplification - Why ?

In this issue, we are going to look at the benefits of edge simplification over edge curve concatenation. When working with imported data, it is relatively common to find surfaces that have polyline edges. Generally this is not a problem, however, if it is necessary to construct additional geometry from the original data it can be beneficial to improve the edge conditions to clean the data for future operations.

In this example, we are going to look at a scenario where edge simplification of a single face provides a better platform for subsequent surface construction.



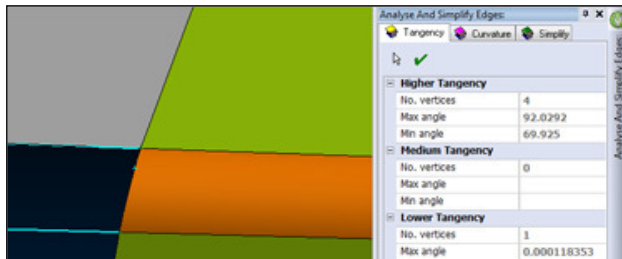
The objective is to construct a surface that connects the yellow & orange fillet data, and one that is also constrained by the blue wireframe curve geometry.

The hurdle in this example is that the orange face (at the open end) has two polyline edges whereas the corresponding yellow face has a single smooth edge.

The solution most often applied is to extract the wireframe edge geometry for both the yellow & orange faces. In the case of the orange face where two edge curves are returned, the data is concatenated into a single curve and reprocessed to remove any unnecessary knots or concatenation points.

Importantly, constructing new surface geometry from wireframe data does not manage tangency conditions with the connecting faces.

However, it is also possible to solve this condition using Analysis > Simplify Edges. Simplify Edges is an advanced tool to validate and convert polyline edge conditions into smooth single edges.



Simplifying this face will remove the corner condition that is currently marked as a blue point with a corner angle of only 0.000118353 degrees.

The surface is regenerated with a single smooth edge. Importantly, the user is able to control which conditions can be removed using minimum / maximum curvature and angular tolerances.

With the edge data simplified, the orange face now has a single edge that corresponds with the opposite yellow face. It is now possible to construct surface geometry that forces tangency through the connecting faces using either a tangent patch, auto constrained or advanced lofting.

[If you want to try this simple example and test the results, please select here to download the model data as an IGES file.](#)

If you have any tips or tricks that you would like to share, please email me with a short description (marc@vero.co.uk) and I will include them within a future Vero Newsletter.

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