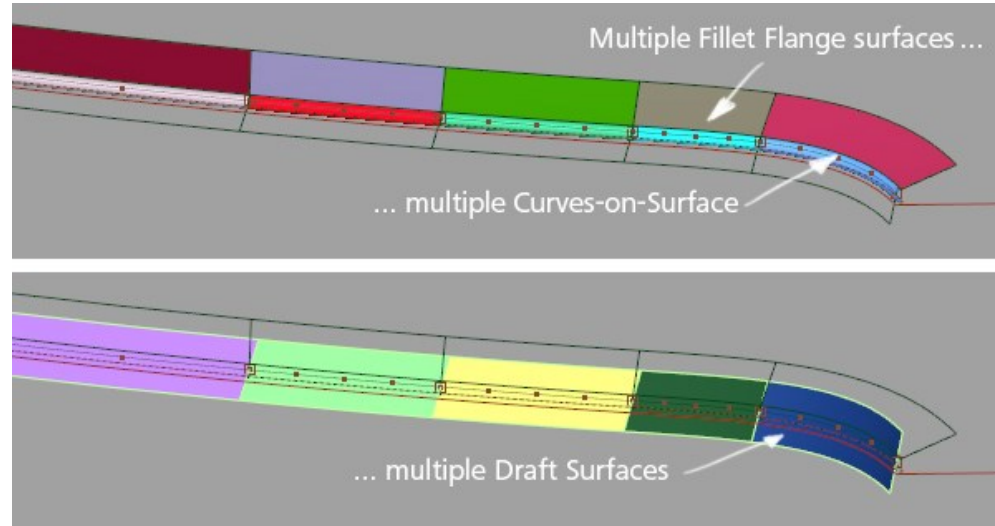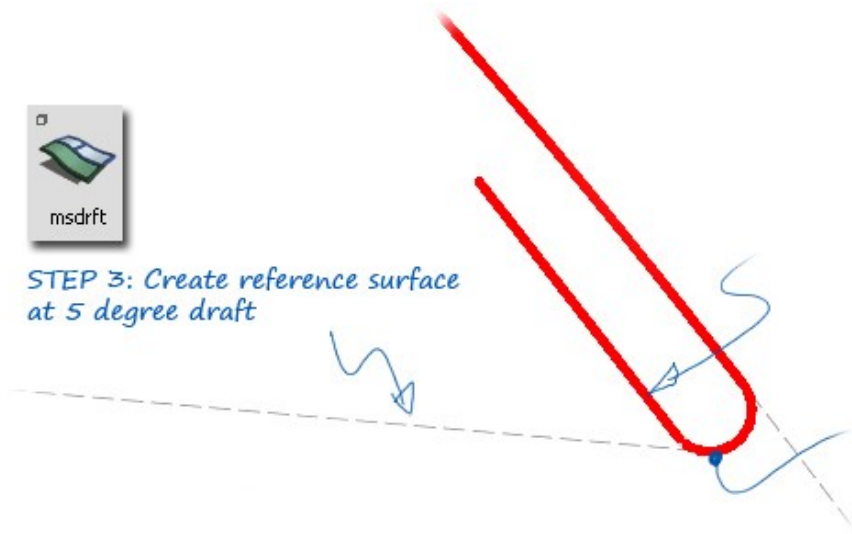# A5.24 : Hood Edge Extra – Class A CV Layout and Patch Structure

In the previous tutorial, in Step 3 we created a draft surface ('clearance surface') from the tangent line on the hem flange. Because the Fillet Flange tool created multiple Bezier surfaces, there were multiple Curves-on-Surface, and therefore the draft surfaces were split into many segments:

msdrft

STEP 3: Create reference surface at 5 degree draft

Multiple Fillet Flange surfaces ...

... multiple Curves-on-Surface

... multiple Draft Surfaces

Class A Modelling Objective :

For Class A modelling, we aim to improve the surface structure in two ways:

1. Align the surface split with the trim line split.

2. Have one surface for the end blend detail instead of multiple surfaces.

We do this by rebuilding the multiple Curves-on-Surface into a single Bezier curve, using the Fit Curve tool.

The key to this is choosing a good surface layout to work from in the first place (see overleaf):

2. Have a single surface for the end blend detail

1. Align the surface split with the original projected curves
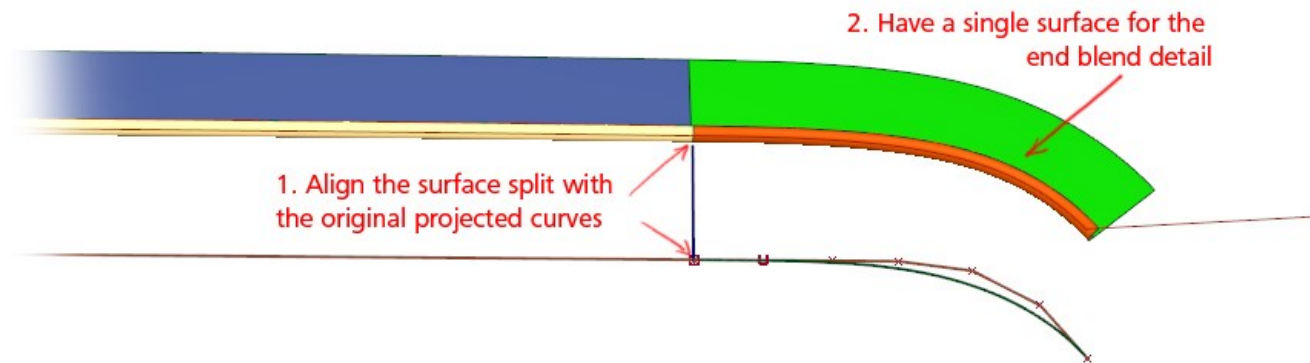
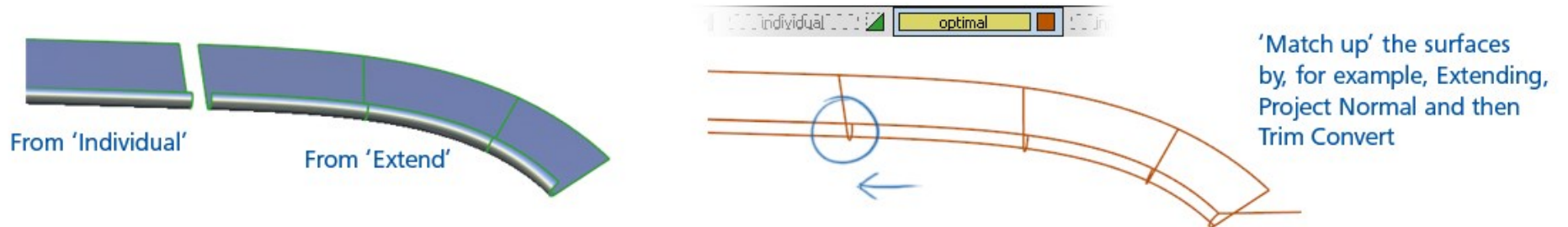# Analysis : Choose the best 'base' surfaces to work from :
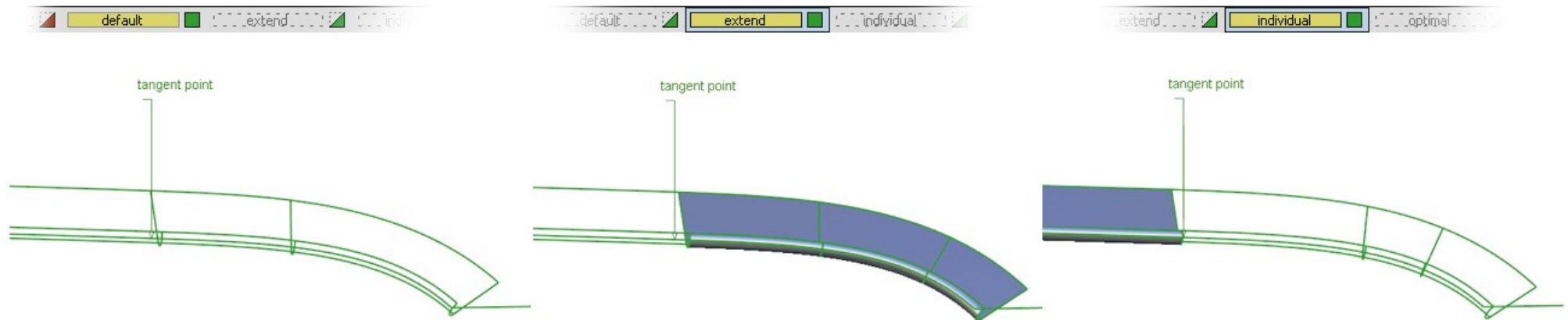
Default Fillet Flange settings with Chain Select doesn't give the ideal surface layout and doesn't align with the tangent point.

Fillet Flange with **Extend** used at right hand end - again using Chain select – gives better surface patch layout, but still misses the tangent point.

Fillet Flange used **individually** on each edge, one at a time. Hits the Tangent point, but has a less good surface patch layout.

Create *Optimal* layout by combining elements of *Extend* and *Individual* surface layouts

From 'Individual'

From 'Extend'

'Match up' the surfaces by, for example, Extending, Project Normal and then Trim Convert

INDEX

Time	Topic	Menu/Palette	Tool	Options
	Analysing Surface Layouts			
0.55	Identifying the tangent point on the hood edge, where the main curve and the accelerated curve joins on trimmed edge.			
1.32	Analysing the default Fillet Flange surface layout	Surfaces > Rolled Edge	**Fillet Flange**	
1.40	Analysing the extended Fillet Flange surface layout	Surfaces > Rolled Edge	**Fillet Flange**	*Extend*
2.03	Analysing the surface layout on separate Fillet Flange operations			
2.32	Comparing the extended and the individual Fillet Flange results	Surfaces > Rolled Edge	**Fillet Flange**	
2.50	Comparing segment length and alignment with the tangent point			
3.21	Showing an optimal solution			
4.05	Discussing segmentation			
4.30	Example of using the less optimal segmentation			
4.42	Using the Curve-on-Surface created by the Surface Evaluation (Draft Angle) Diagnostic Shade	Diagnostic Shade	**Surface Evaluation**	*Draft Angle*
4.54	Creating a single reference curve from three curves: duplicate and attach connect	Object Edit >Attach	**Attach**	*Connect*
4.58	Using the Fit Curve tool to create a new curve	Curve Edit	**Fit Curve**	
	Create the Fitted, single curve			
5.40	Duplicate Curve, Attach Connect, Fit Curve (as above), but this time on the optimal curve			
6.47	Analysing the CV spacing on the optimal fitted curve			
6.59	Comparing the two curves			
7.59	Working interactively with Fit Curve history – moving CVs by hand	Curve Edit	**Fit Curve**	
9.26	Turning History off temporarily to improve interaction speed			
10.45	Building Draft surface and checking continuity – the wrong curve			
11.52	Building Draft surface and checking continuity – the right curve	Surfaces	**MS Draft**	
12.22	Summary of the techniques used			