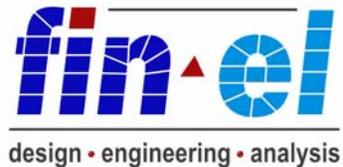


Surfacing Techniques for All Solid Edge Users

Jeffrey Berger
Fin-el, LLC
jberger@fin-el.com
317.873.3350



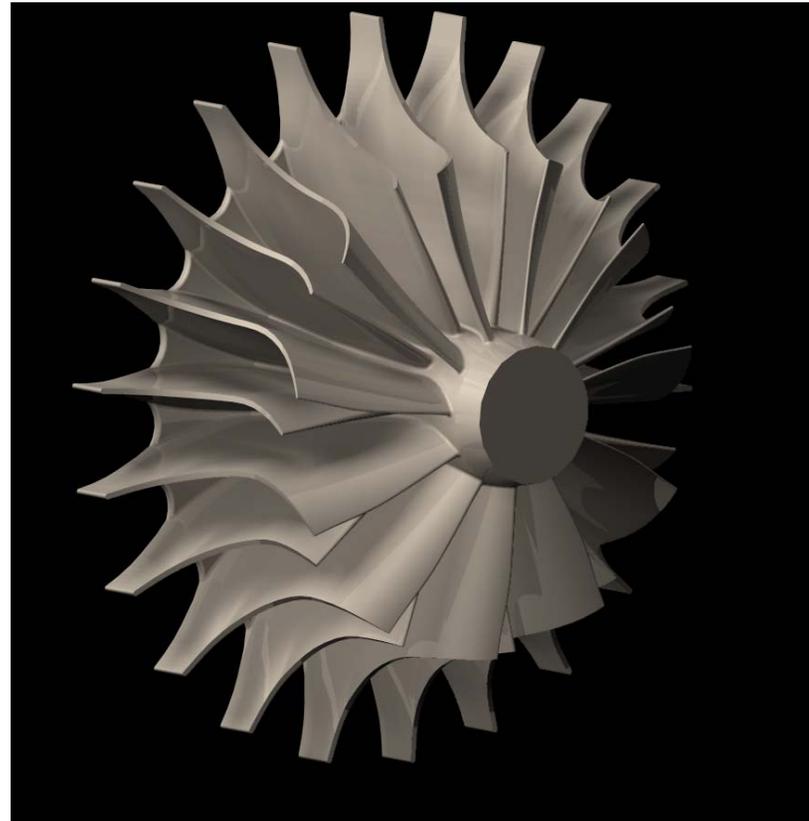
Premium Partners:



Microsoft

Overview

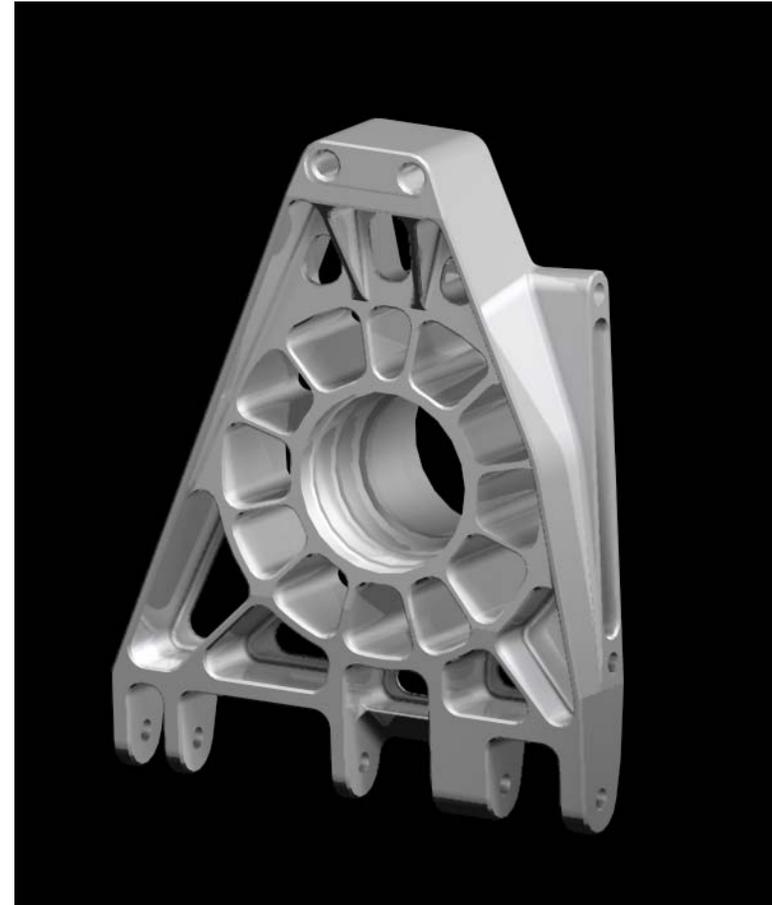
Solid Edge includes a very powerful set of surfacing tools. Use of these tools is not reserved for those designing automotive components, consumer products, molds, and other products with complex surfaces. In this presentation, we will show you a number of techniques that all Solid Edge users can incorporate into their workflow to simplify and shorten the design process.



Outline

Today, we will discuss the following techniques:

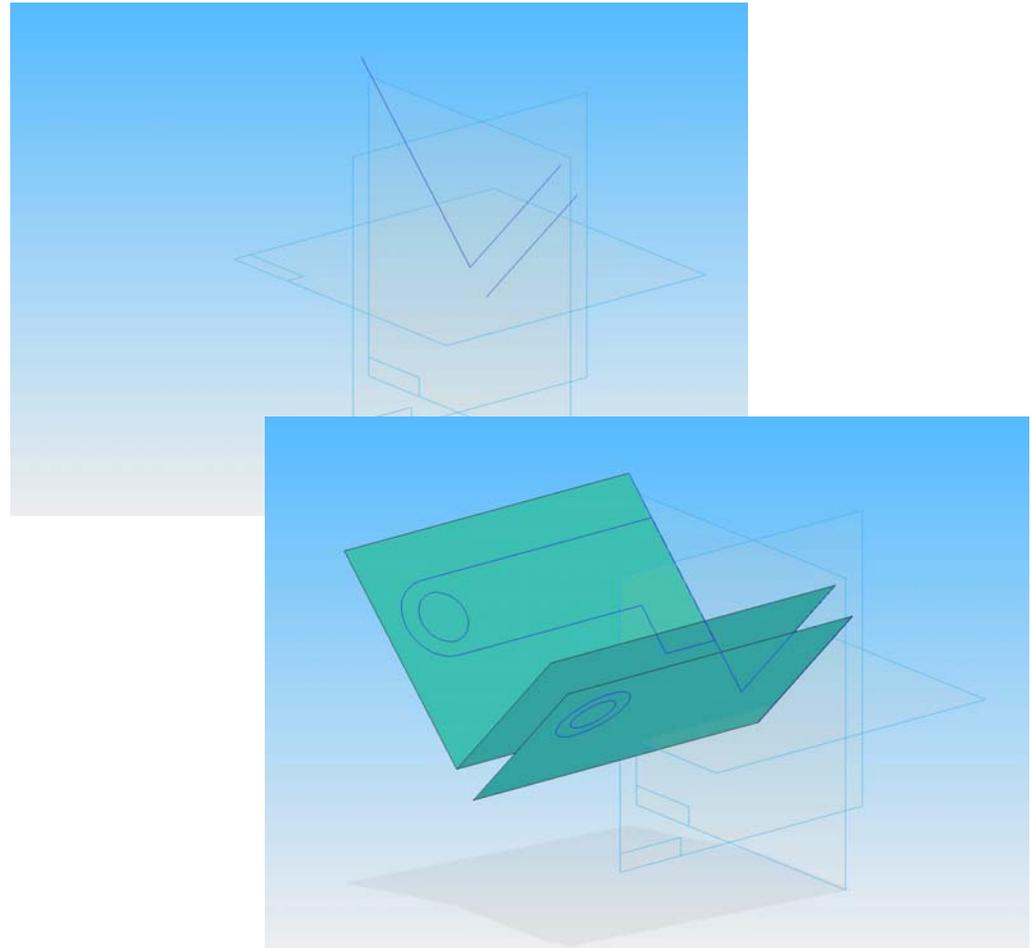
- Using surfaces to establish sketch planes
- Using surfaces to define from/to extents for protrusions/cutouts
- Using copied surfaces to capture intermediate geometry for future use
- Using surfaces to create thin-wall features
- Using contour and keypoint curves
- Projecting curves onto surfaces and splitting surfaces
- Using surfaces to create Boolean features



Using Surfaces for Sketch Planes

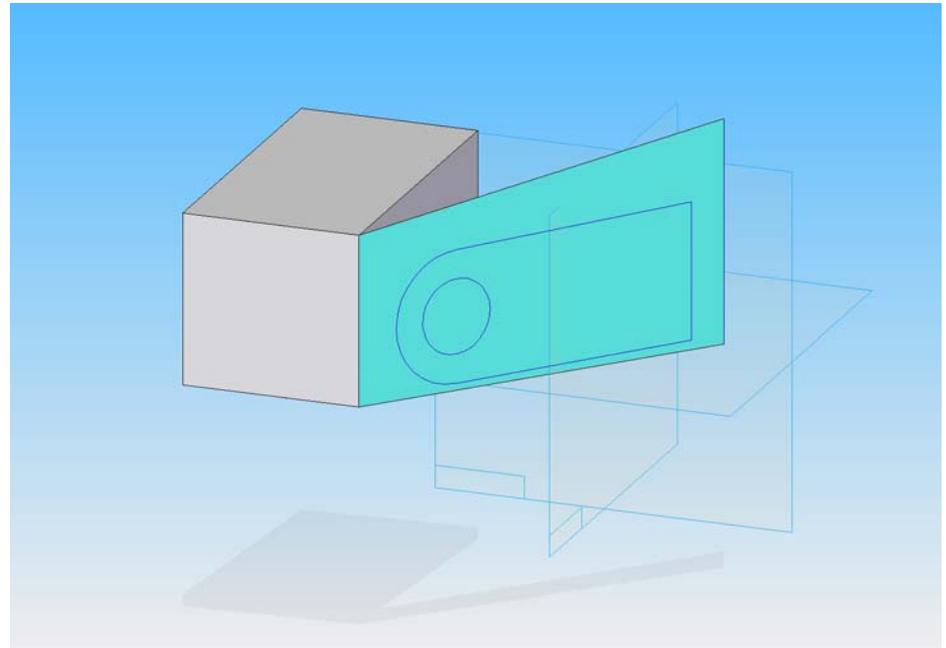
Planar surfaces can be used just like reference planes, but offer some advantages:

- Makes the planes easy to edit since they are derived from sketches and profile sketches
- Simplifies the creation of planes with compound angles in space
- Can create multiple planes in one command



Using Surfaces for Sketch Planes

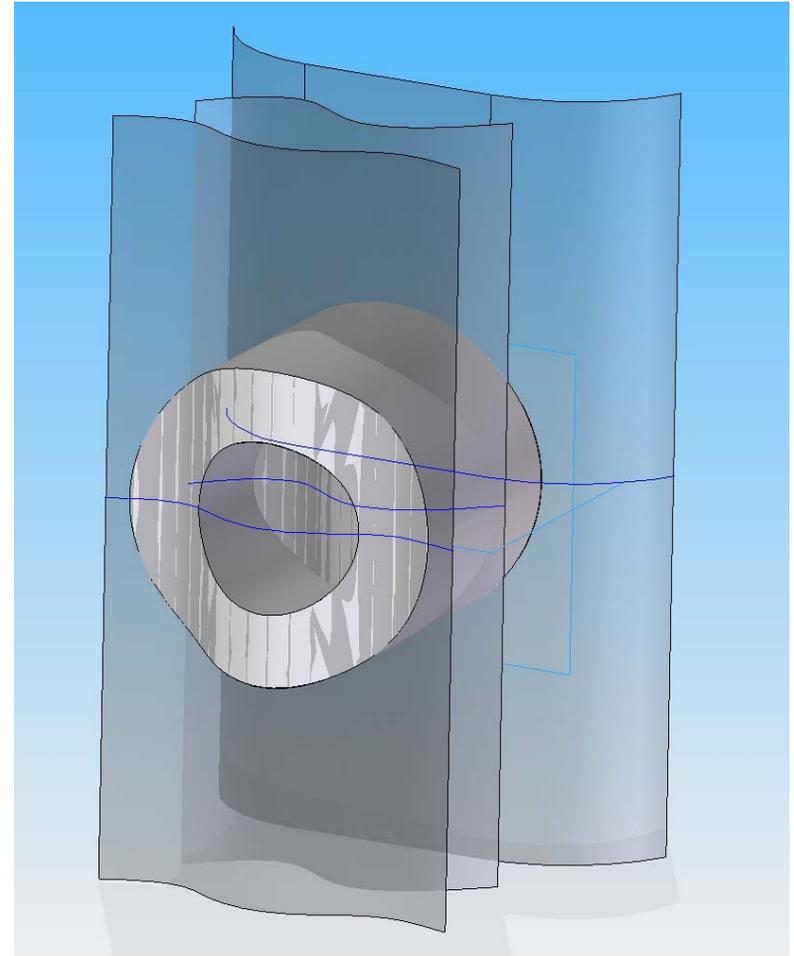
- Surfaces to be used as planes for sketches are typically created using the Extruded Surface command
- Can also be created using a Blue Surf or Swept surface, but can be harder to ensure surface remains planar



Using Surfaces for Extents

Surfaces can be used to define the limits for protrusions and cutouts

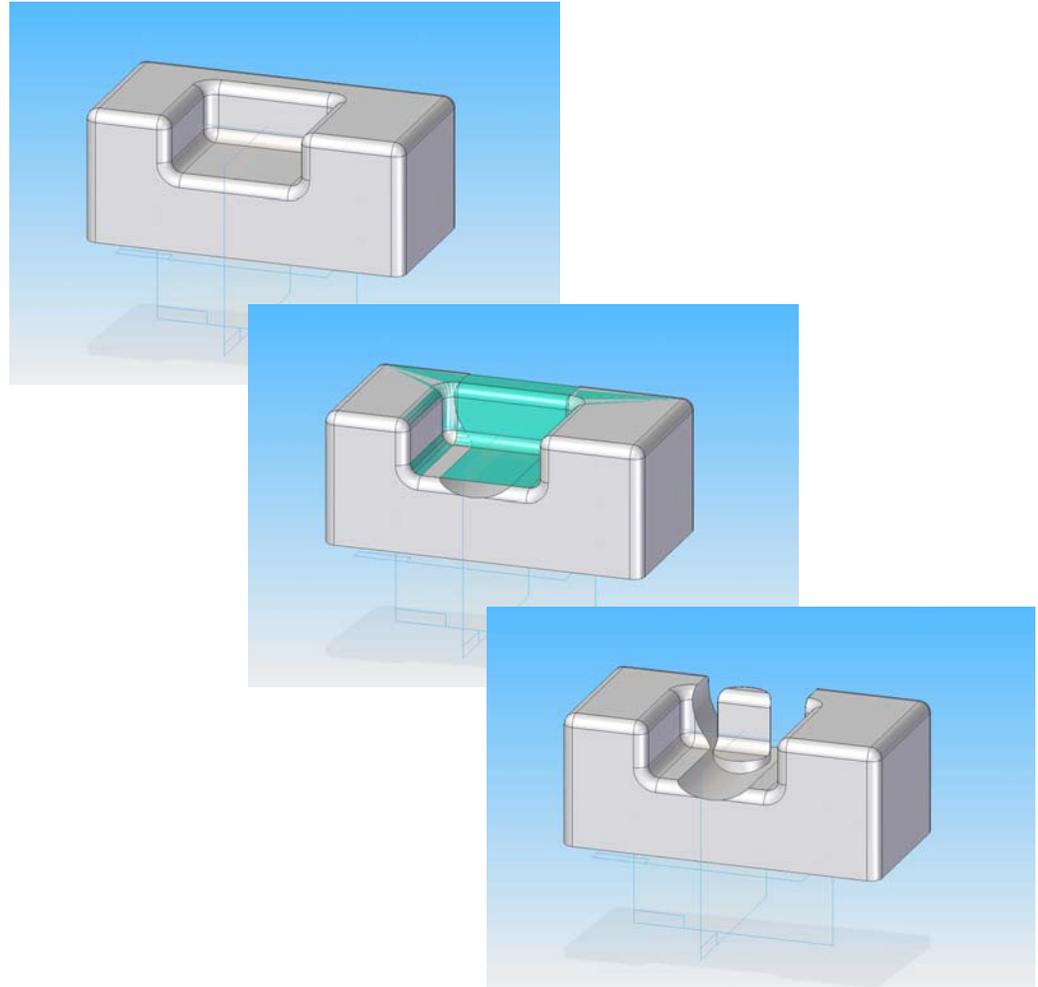
- Can simplify modeling process by reducing the number of steps it takes to model
- Can create geometry that would otherwise be very difficult or impossible to create



Using Copied/Offset Surfaces

Copies of surfaces can be made to capture geometry at intermediate steps

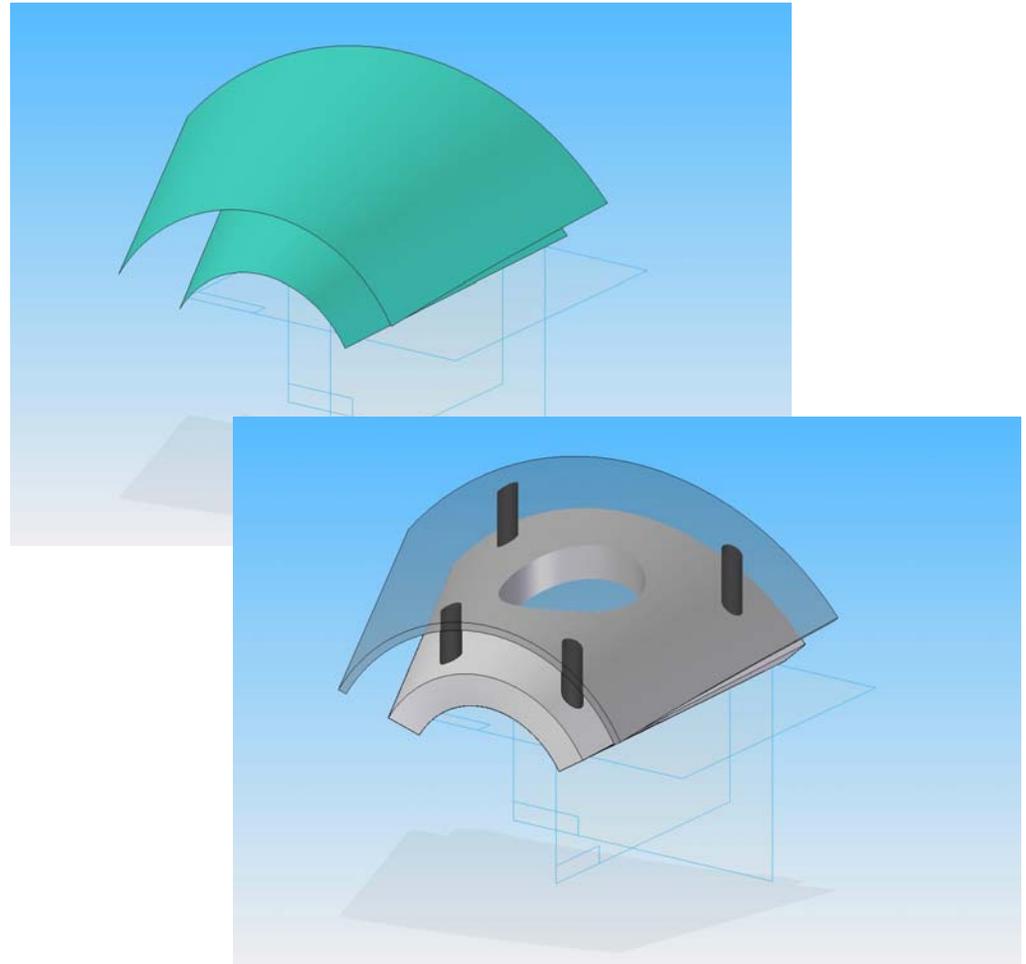
- Can refer back to these surface later in the design process



Using Copied/Offset Surfaces

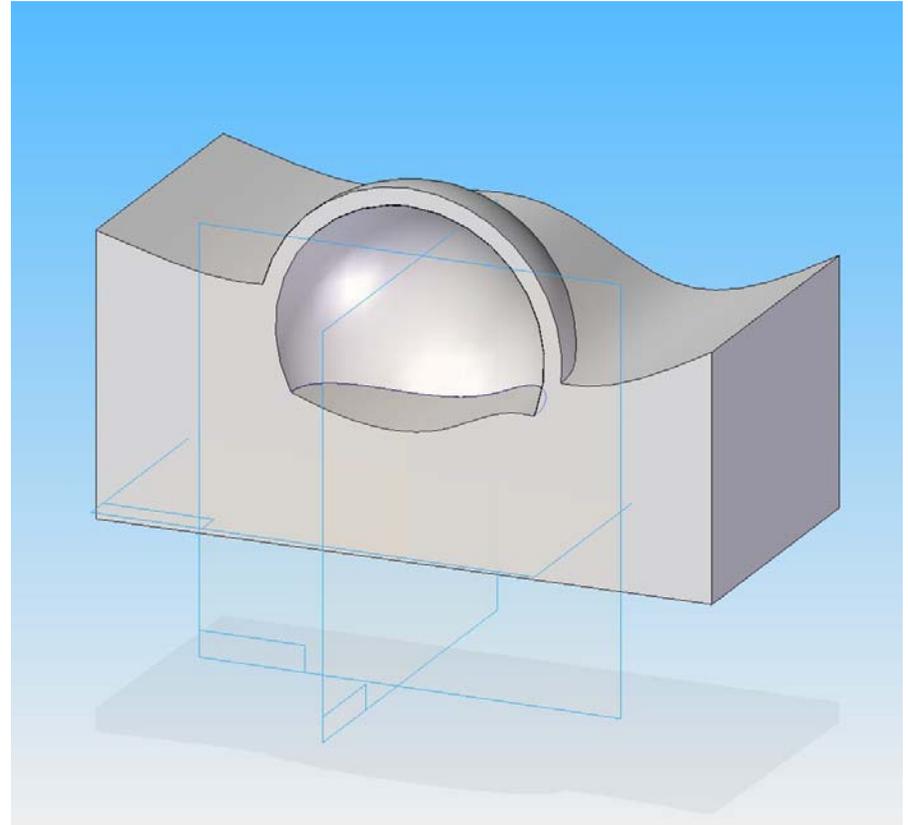
Offsets of surfaces can also be made to capture geometry at intermediate steps

- Can refer back to these surface later in the design process



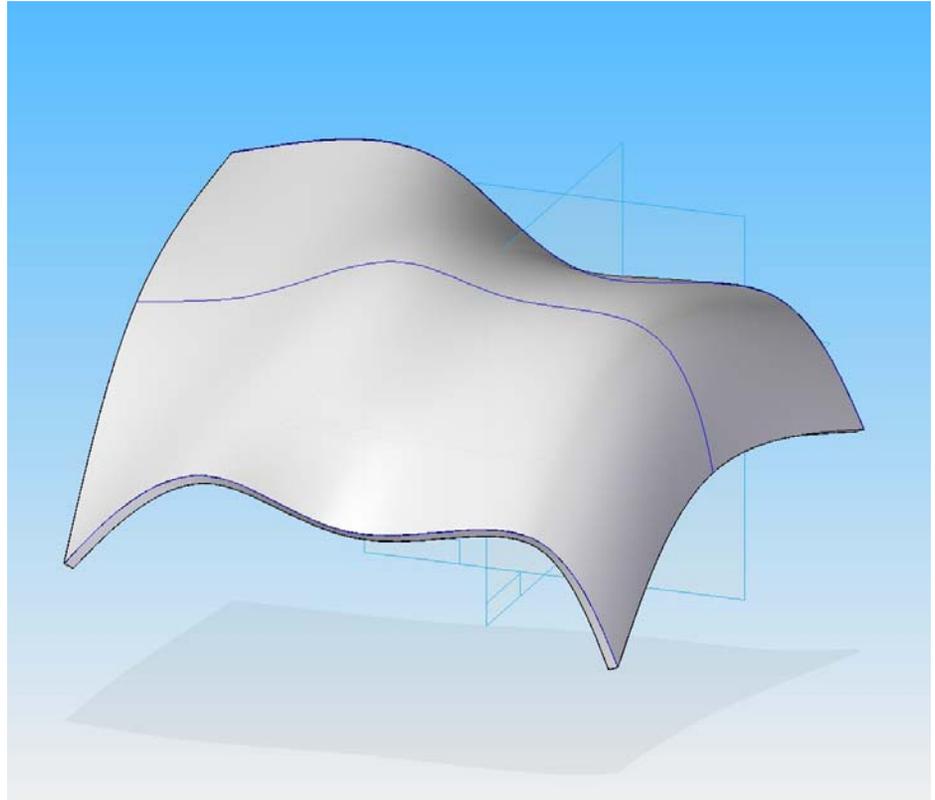
Using Surfaces for Thin-wall Features

- Surfaces can be used to create thin-walled features when the standard thin-wall and thin-region features will not work



Using Surfaces for Thin-wall Features

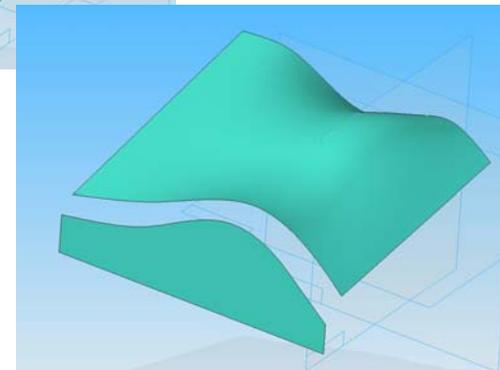
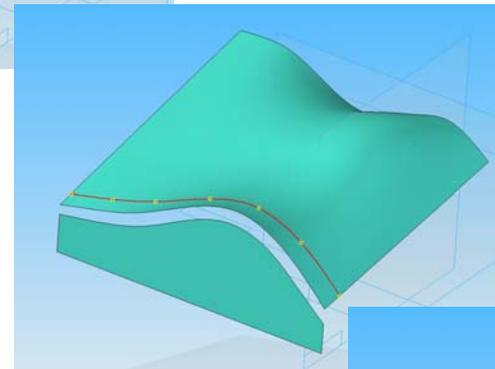
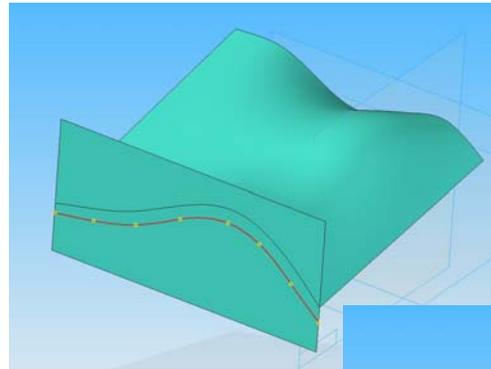
- Surfaces can also be be thickened to create thin-walled features or sheet metal features



Using Contour and Keypoint Curves

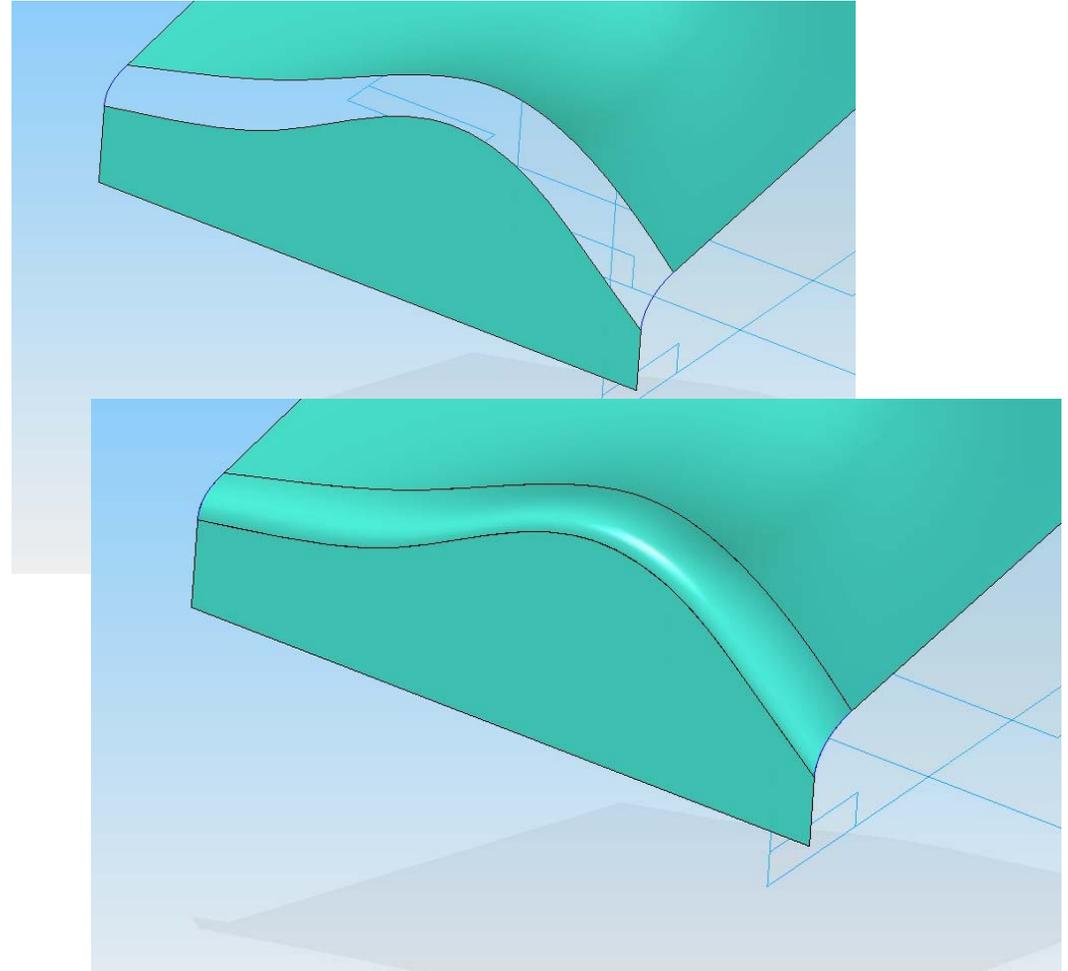
Contour and Keypoint Curves can be used to easily create curves in 3D space

- Contour curves are drawn directly on surfaces and can be used to create a variety of features especially swept features
- Can also be used to trim or split surfaces



Using Contour and Keypoint Curves

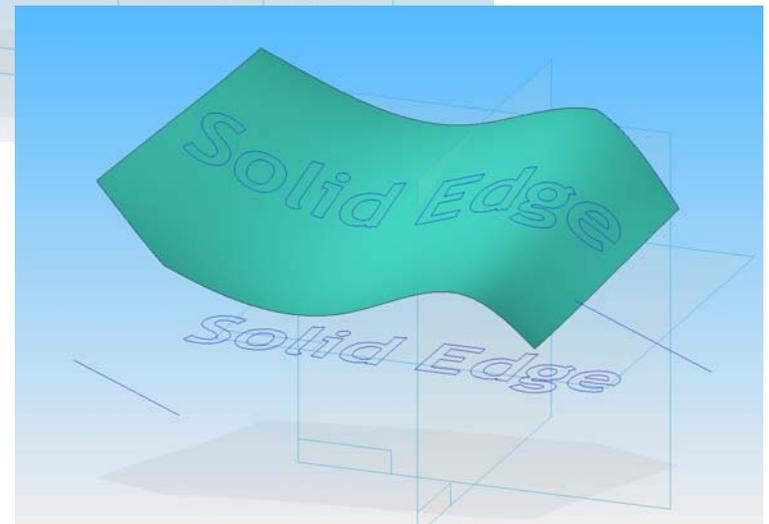
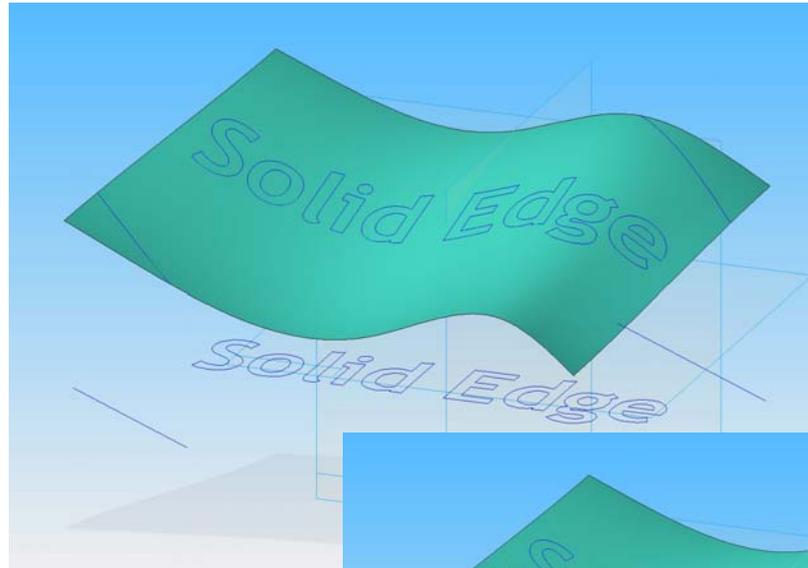
- Keypoint curves can be used to link existing planar or non-planar geometry



Curve Projection and Surface Splitting

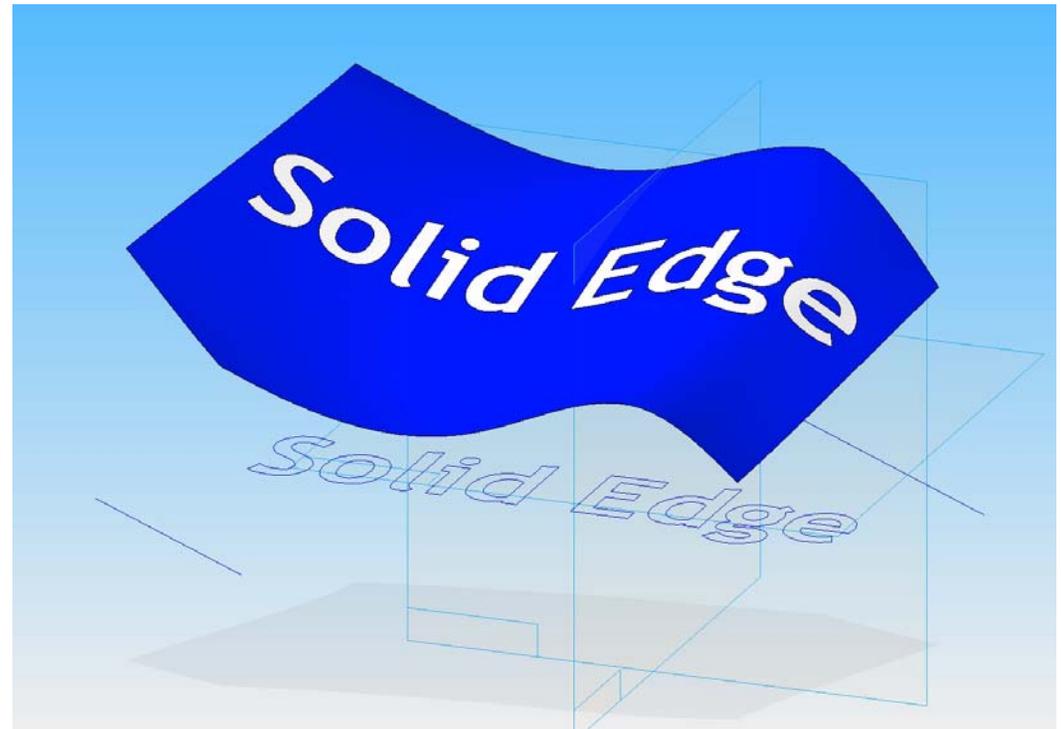
Curves from sketches can be projected onto surfaces

- These curves can then be used to trim surfaces



Curve Projection and Surface Splitting

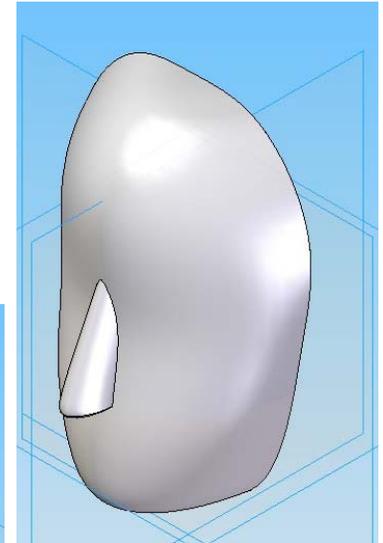
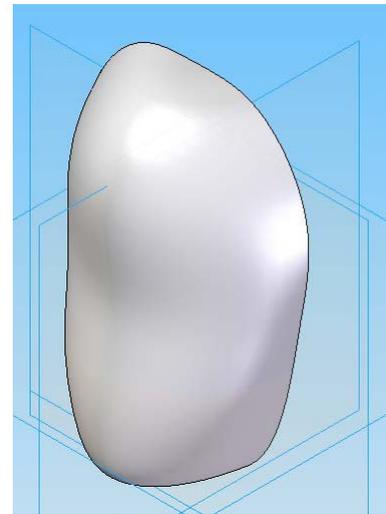
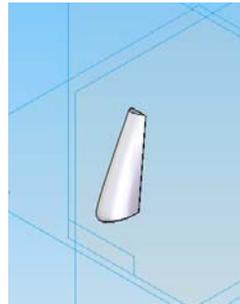
- Projected curves can also be used to split the surfaces into multiple surfaces
- Once the multiple surfaces are created, you can change the colors and textures of them to create decals and paint schemes



Using Surfaces to Create Boolean Features

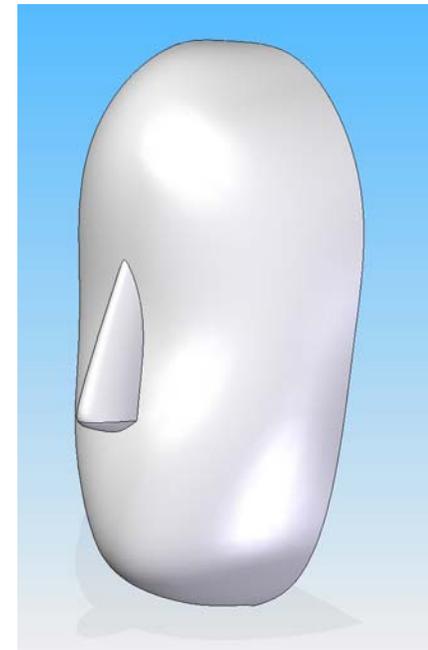
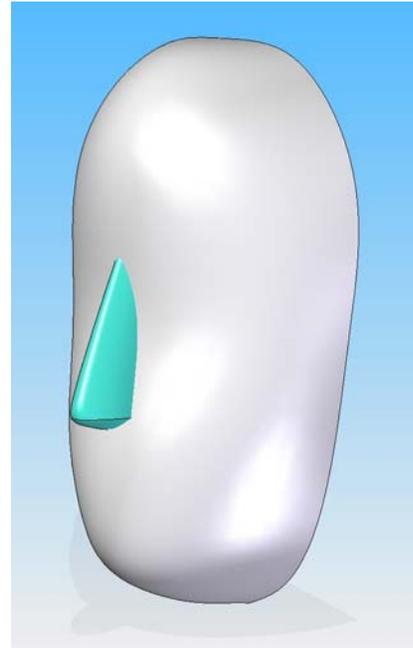
Surfaces can be used to define the extents of a Boolean feature

- A Boolean feature is a solid feature that is created by filling a region with material – like sticking a piece of clay onto the face of a clay head to create a nose



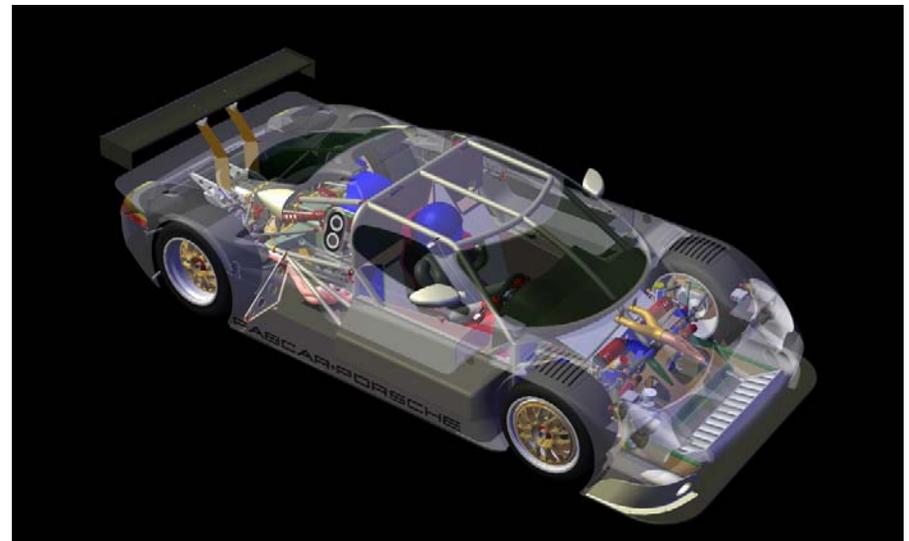
Using Surfaces to Create Boolean Features

- Boolean features can be created using single or multiple surfaces – multiple surfaces must be stitched together to form a single body
- The surface(s) used to create a Boolean feature do not necessarily need to be close, but must be bounded by solid material on the open side – like an open profile

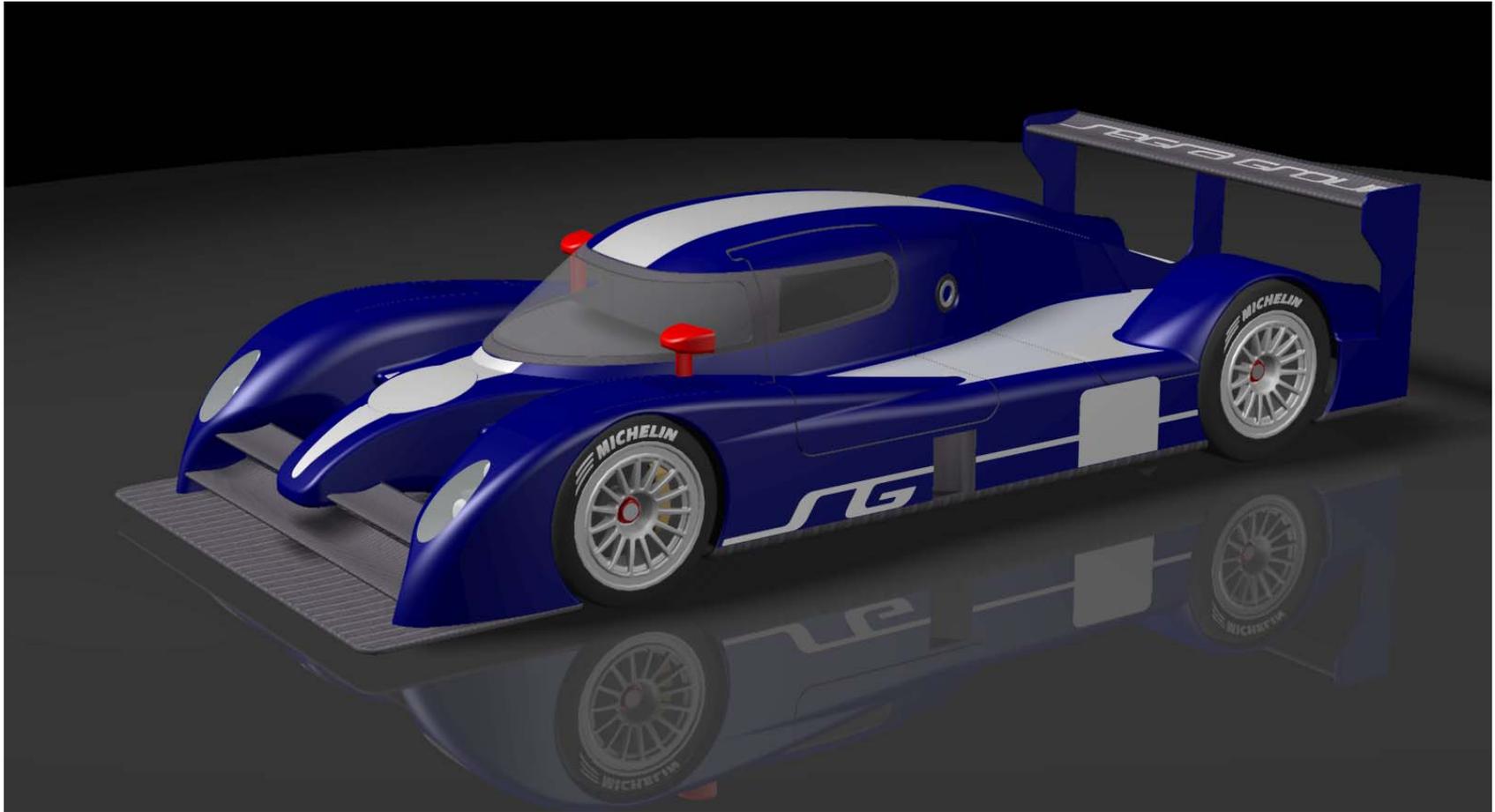


Summary

- Today, we looked at a variety of surfacing techniques that can help improve the productivity of all Solid Edge users.
- For more information or training opportunities, please contact me at:
- Fin-el, LLC
www.fin-el.com
jberger@fin-el.com
317.873.3350
- Thank You!



Examples



Examples



Examples



Examples



Examples



Examples



Examples

