

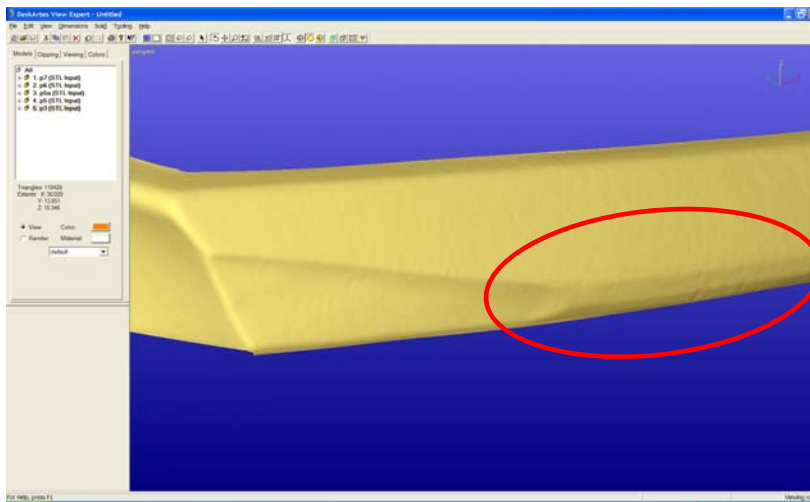
FreeForm® Modeling Plus™ v8.2 — Solutions

Solution: Scan Clean-up and Surfacing

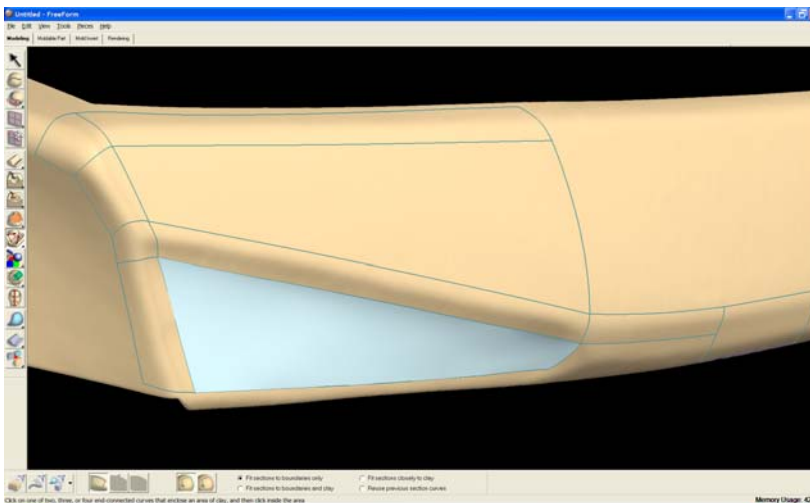
Problem: Scan data from existing products and prototypes is an invaluable part of the development process, but it usually needs to be cleaned up, smoothed, and surfaced over prior to release and manufacturing. Many tools for processing polygonal data are too general, and cannot deliver clean surfaces or solids.

Solution: Use the versatile FreeForm Modeling Plus tools to modify both polygonal and surface/solid modeling data. By importing STL, OBJ, or PLY scan data and converting it to digital clay, FreeForm modeling tools can be used to fix scan data anomalies, and the modified clay can then be used as an accurate haptic guide for surfacing.

The following sequence illustrates:



1. Scan data is viewed here using DeskArtes™ View Expert. Note the uneven surfaces, pits, and orange peel texture on the surface.



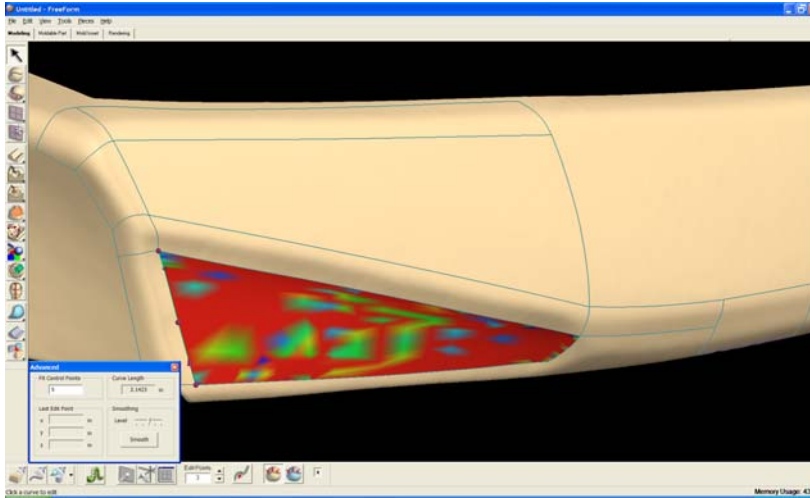
2. This same data was imported into the FreeForm Modeling Plus system and converted to digital clay with a surface thickness of 0.125 inches.

In this example, areas of the scan data were cleaned up using the *Shape Clay* command. Other areas were surfaced over directly.

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3. The fit of the surfaces was adjusted by modifying the boundary curve characteristics and edge tangency conditions. The fit was examined using *Measure Fit* color mapping.

Subsequently, all curves and surfaces were exported for downstream CAD/CAM use.