

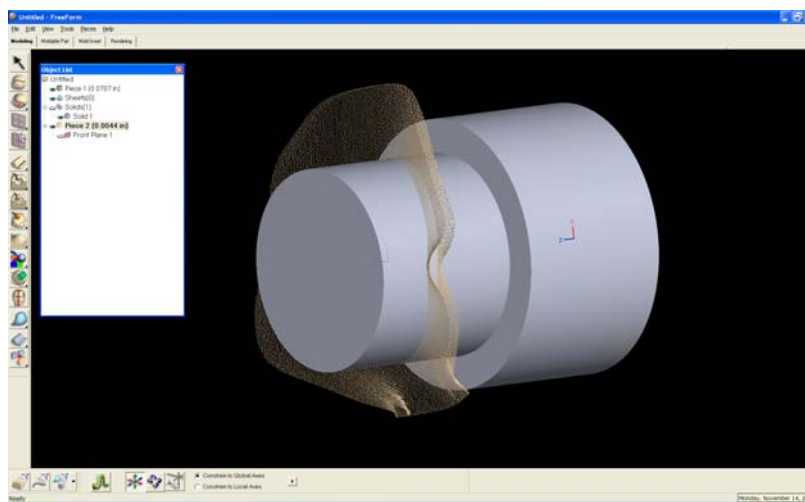
## FreeForm® Modeling Plus™ v8.2 — Solutions

### Solution: Trim, Heal, and Integrate STL Files

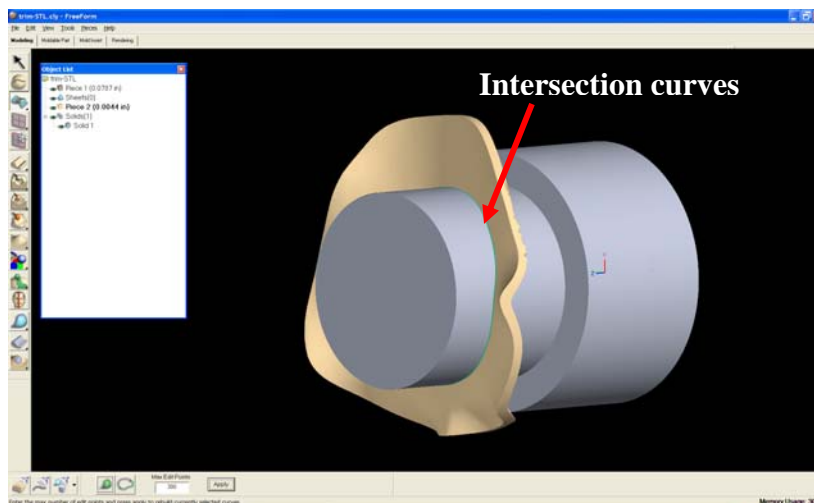
**Problem:** Integrating STL and CAD-generated surfaces in the same dataset often requires trimming and edge healing, and decimation of STL files using CAD-generated surfaces or boundary curves.

**Solution:** The FreeForm Modeling Plus system allows import of CAD-generated trim curves, surfaces, and solids which can then be used to identify and trim areas of digital clay for later export.

The following example illustrates:



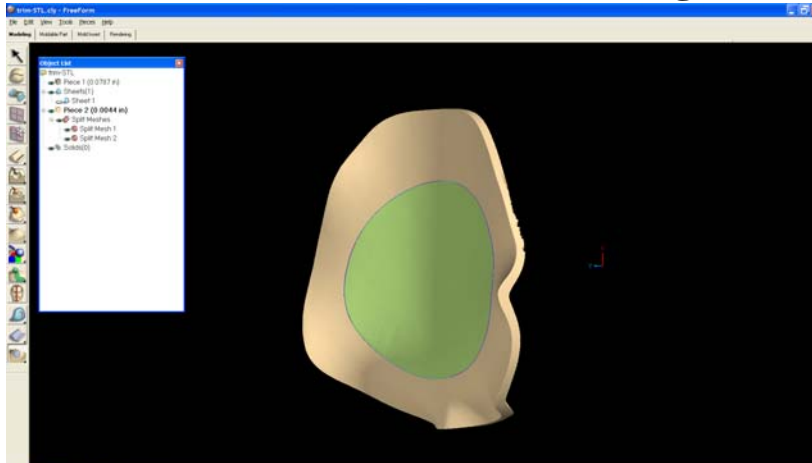
1. A die body surface model was imported into FreeForm Modeling Plus as a Parasolid® part file and STL surface scan data was imported (any holes were filled/healed) and converted into a digital clay piece. Since the die body was located in CAD space, the scan data was re-positioned to match. Using the same intersection curve, the objective was to trim both the die body and the scan data to produce an integrated dataset.



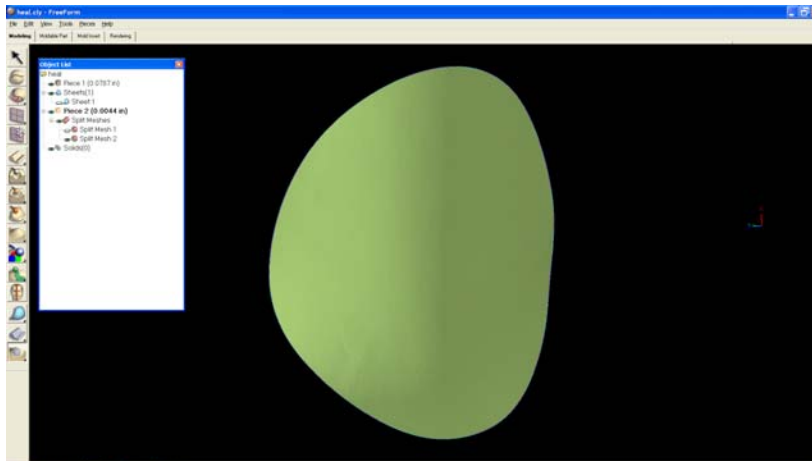
2. Using the *Surface to Clay Intersection* feature, intersection curves were generated where the cylindrical face went through the converted STL scan data.

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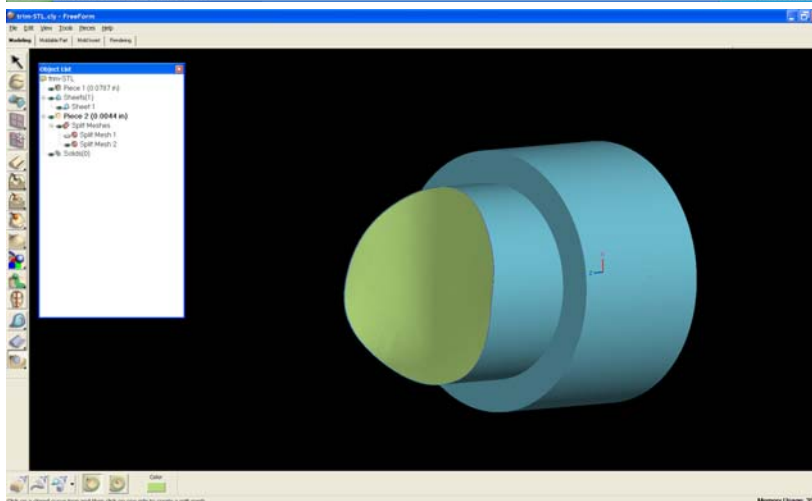
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3. The *Split Mesh* function was used to split and trim the scan data, including individual triangles at the boundary edges.



The split mesh is a sheet of trimmed polygon data whose edge aligns exactly with the NURBS data that intersected it.



4. The same curve that was used to split and trim the scan data was used to trim the solid. Subsequently, the dataset was exported separately as surfaces and decimated STL data for combining in CAM for manufacturing.