

# Freeform® & Freeform Plus™

## ORGANIC DESIGN SYSTEMS FOR MANUFACTURABILITY



### Fast 3D Modeling with Precision for Product Design

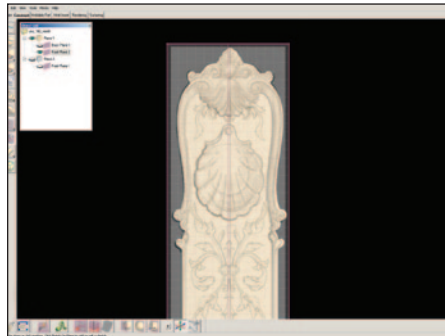
The Freeform® systems are unique solutions for fast 3D modeling of complex, highly-detailed, organic shapes and preparing them for manufacturing.

The Freeform system offers a fast and cost effective way for designers and modelers to create original models or modify and stylize scan data, and then output for prototyping or milling. The system includes a comprehensive set of modeling and detailing tools, dimensional control, and import of polygon data for reference and modeling. Parting line evaluation is also included, enabling users to avoid costly production mistakes through adjustment of their models early in the design process.

If your work requires CAD part interoperability and preparing models for manufacturing, the Freeform Plus system has all the capability of the Freeform system and also includes NURBS surfacing and solids tools, CAD part interoperability, and moldable part and mold insert functionality.



The Freeform systems use a virtual clay metaphor that provides unparalleled creative freedom, and include a PHANTOM® device – a true 3D interface with force feedback. Users work in 3D faster than ever before because they use their sense of touch to model virtual clay just like real clay. The Freeform systems are easy to learn, and users typically become productive within a few days.



With the Freeform Plus system, sketches can rapidly be transformed into virtual clay models. Sculptural, artistic details can then be added and the model can be exported for downstream CAD/CAM. The Chateau Collection of Baldwin Archetypes by designers of Stanley Black & Decker's – Hardware and Home Improvement Group. Baldwin and others reserve all rights to the Chateau design.

#### With the Freeform systems you can:

- Use your sense of touch with virtual clay to work in 3D faster than ever before
- Model the most complex, organic shapes in record time
- Easily create multiple design variations
- Rapidly clean up, modify, and stylize scan data
- Create detailed textures for prototyping, evaluation, and manufacturing
- Accurately identify draft problems
- Ability to fix draft problems‡
- Replace manual mold processes
- Combine with other 2D & 3D tools, RP machines, and scanners
- Expand existing CAD/CAM workflows
- Output for RP or milling and CAD/CAM‡

‡ Freeform Plus only

## Fast and Versatile Design & Modeling

Both the Freeform and Freeform Plus systems include a comprehensive set of modeling and detailing tools. Which system is right for you depends on your specific modeling and workflow requirements.



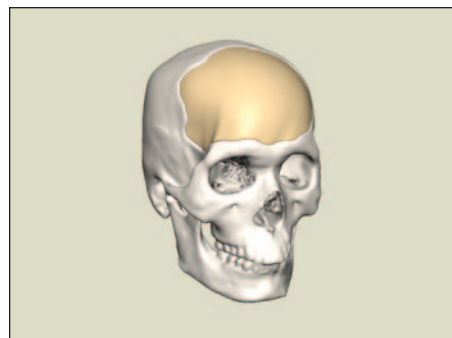
Decorative finial hardware



Bike helmet



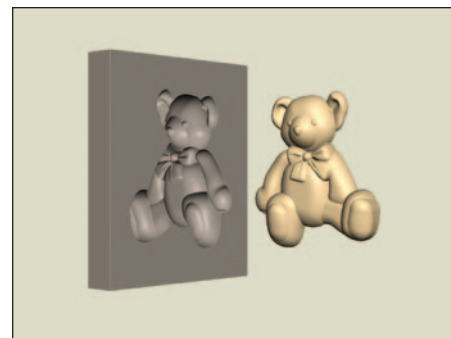
Articulating toy



Cranial implant



Outersole



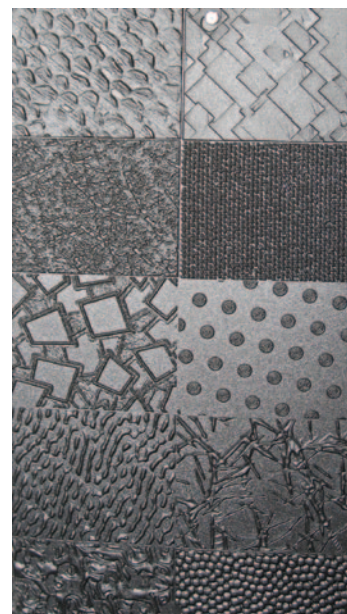
Chocolate mold

## Detailed Textures for Prototyping, Evaluation, and Manufacturing

You can create your own textures or use bitmap images to emboss or stamp textures into the model surface. Fine details in the model geometry are captured for accurate RP or milling and CAD/CAM‡.



Cell phone cover with manufactured sample textures



Bike helmet modeled by Freddy Figuera. Cell phone cover modeled by Antonius Köster, Antonius Köster Modellbau e. K.

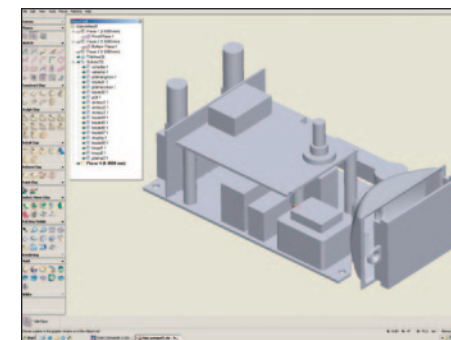
‡ Freeform Plus only

## How are the Freeform and Freeform Plus Systems Different?

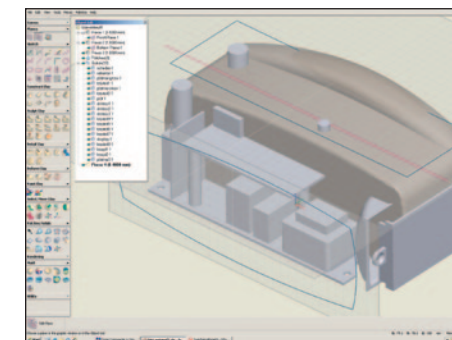
The Freeform and Freeform Plus systems enable you to model and output for rendering and rapid prototyping or milling. In addition, the Freeform Plus system includes features that enable you to prepare your models for manufacturing including:

- NURBS surfacing and solids tools such as semi-automated curve and patch creation tools and environment mapping
- Moldable part and mold insert design
- CAD part interoperability including import/export capability for native Parasolid®, STEP, and IGES\* solids & patches

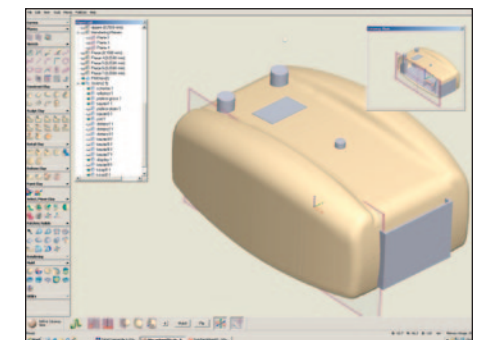
The Freeform Plus system enables you to import CAD data from existing parts and then work with virtual clay to rapidly explore shapes and ideas, develop multiple design concepts, and refine the model. Then export to CAD/CAM to finalize for manufacturing.



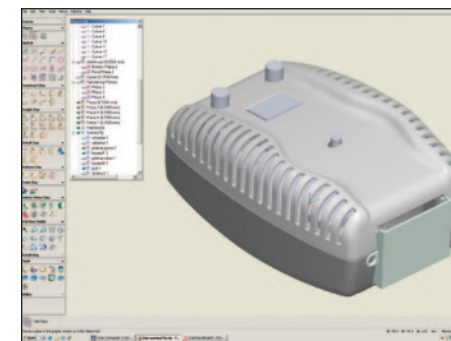
Import CAD data (IGES and Parasolid) from existing part.



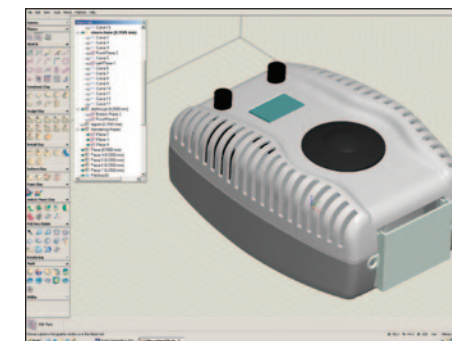
Quickly explore ideas and experiment with forms to develop design concepts.



First concept model with cut-away view.



Second concept model for prototyping, and export to CAD/CAM (Cimatron).



Model prepared for rendering.



BBE-Electronic Stroboscope  
www.bbe-electronic.de

For a comprehensive Freeform and Freeform Plus feature comparison chart and system requirements, see Freeform systems online at: [www.sensible.com](http://www.sensible.com)

Stroboscope modeled by Antonius Köster, Antonius Köster Modellbau e. K.

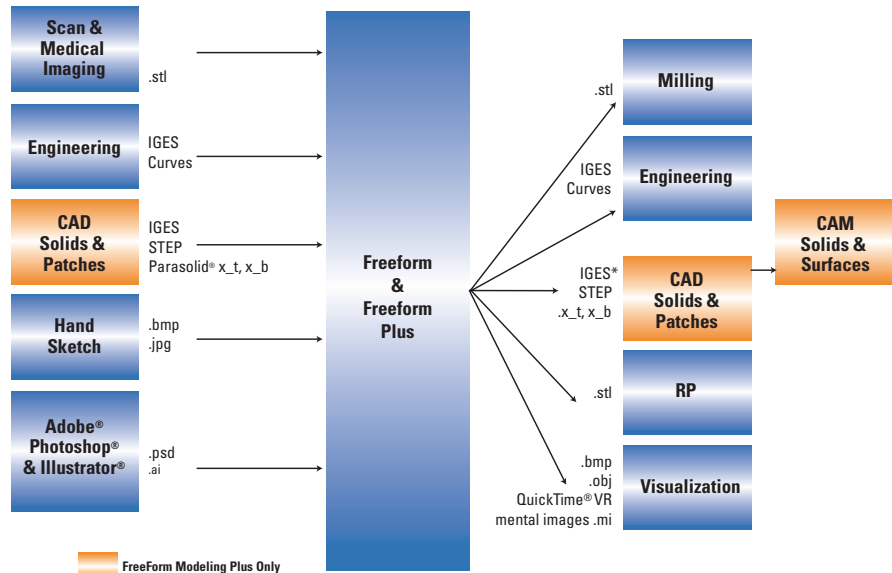
\* Results will vary by ability to surface the model.

# Freeform® & Freeform Plus™

ORGANIC DESIGN SYSTEMS  
FOR MANUFACTURABILITY

## Flexible workflows

The Freeform systems support a broad range of all-digital workflows that allow users to leverage other 2D and 3D tools.



\* Results will vary by ability to surface the model.

Upgrades from the Freeform system to the top-of-the-line Freeform Plus system are available.

## Sculpt and carve virtual clay models just like real clay

The Freeform systems include a PHANTOM® device – a true 3D interface with force feedback that enables you to use your sense of touch to sculpt and carve virtual clay models. This natural and direct way of working makes the Freeform systems easy to learn, and users typically become productive within a few days.



PHANTOM® Desktop™



PHANTOM Omni®

The Freeform Plus system includes the PHANTOM Desktop device, which delivers higher fidelity, stronger forces, and lower friction than the PHANTOM Omni device. The Freeform system is available with either the PHANTOM Desktop or PHANTOM Omni device.

## About Sensable

Sensable Technologies is a leading provider of 3D touch-enabled digital solutions for product design, digital content creation and fine arts, commercial software development, and academic and commercial research. At the core of Sensable products is the PHANTOM line of haptic devices, which makes it possible for users to touch and manipulate virtual objects. Sensable maintains headquarters in the United States and a sales office in Japan. Sensable products are available through direct and reseller channels.

System requirements: See Freeform Systems at [www.sensable.com](http://www.sensable.com)  
Product and corporate information: [www.sensable.com](http://www.sensable.com).

Product specifications are for the Freeform and Freeform Plus v11 software and are subject to change without notice.

 **sensable**  
3D DESIGN more possibilities

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