

Sensable's Freeform® 3D Organic Design System Helps Maxillofacial Surgical Teams Rebuild Faces -- and Lives -- with Better Implants

WILMINGTON, Mass.--(BUSINESS WIRE)--Sensable announced that custom facial prosthetics, custom dental and maxillofacial implants, as well as custom surgical guides, created with its Freeform® 3D modeling and design system will be spotlighted at the 2011 American Association of Maxillofacial Prosthetics annual conference starting this Saturday, October 29th in Scottsdale, Arizona. Freeforms touch-enabled 3D modeling system allows maxillofacial surgeons and prosthetic designers to start with existing CT or MRI scans, then create and manufacture complex and exceptional-fitting restorations in a fraction of the time previously required by producing them by hand – speeding patient access to improved comfort, aesthetics and function.

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Also at the conference, speakers from US military medical institutions will cite custom implants and prostheses created using Sensable Freeform, during a session on advances in the use of digital techniques for treating wounded soldiers.

Maxillofacial medicine treats anomalies of the face, skull and jaws, both congenital and acquired, through surgery and custom-made implants and appliances. Prosthetists – specialists in designing and fitting restorations – are going digital, and rely on Freeform as their go-to tool for the prosthetics-making process.

"FreeForm allows us to help surgeons rebuild faces -- and lives," said Nancy Hairston, president of MedCAD, a Dallas based custom medical device manufacturer whose custom surgical splints for a complex mandible/maxilla realignment were made on a 3D printer in biocompatible material and are on display at the show. "In the past, custom implants and guides cost a lot more than off the shelf parts. Today, with digital solutions like Freeform, we can create customized parts for the same cost, save time, and with even greater accuracy."

"With FreeForm, our team can create our ClearShield craniofacial implants at least 50 percent faster, moving from an STL file created from a patient-specific CT scan, through to completed design a 3D model in as little as a week," said Cynthia Brogan, CEO of Osteosymbionics, whose naturally shaped implants correct cranial defects.

In addition to the above cases, other custom prosthetics and surgical guides designed in Freeform and showcased at the AAMP conference include:

- Custom dental guides for complex implant surgeries from ProPrecision Guides of Gainesville FL.
- 3D study model of an aneurism to help a surgeon better locate and analyze a treatment plan than by using 2D radiology images alone, from service bureau Protowerx of Langley, British Columbia.
- An obturator from City University of New York (CUNY), and other complex dental appliances provided to treat congenital deformities or for cancer patients when large sections of their palates must be removed, restoring basic human functions such as speaking, breathing and eating.

As a design solution optimized for organically-shaped products, Freeform saves hours, even days, when designing human forms. Its design-for-manufacturability features allow service bureaus to streamline the process of delivering a completed implant or appliance, as well as custom tools and guides which can aid in surgery, using the latest additive manufacturing techniques and biocompatible materials.

"Precise dental implant placement is paramount to stability, comfort and life expectancies. With Freeform, I can design a typical surgical guide in 15 minutes, instead of 45 minutes. The resulting surgical guide is a perfect fit, and with direct manufacturing, we also avoid the heat, fumes, dust and debris involved when manually forming acrylic guides and grinding them to fit, as well as numerous intermediary steps," said John Pellerito, principal of ProPrecision Guides.

"Freeform is the one solution I can't live without in my toolbox," said Shawn Cherewick, owner of Protowerx. "The product has made it possible for us to take notoriously noisy CT scan files, and manipulate their organic shapes so that even jagged and protruding edges of the aneurism - shapes that traditional CAD would choke on - could be produced as models effectively and efficiently like never before."

Freeform Enables Maxillofacial Implant Designers to:

- Easily mirror intact anatomy from one side of the body to the other damaged side, to create perfect symmetry
- Split anatomical files at precisely the right location - both standard and non-standard
- Intuitively control the position of anatomy and implants
- Match jagged or irregular edges - for example, a skull patch for a wounded soldier - at least 5 times faster than traditional CAD
- Prep models for rapid manufacturing and tooling quickly and accurately
- Readily drive new biocompatible materials and additive manufacturing processes, including
 - Trabecular metal that supports bone in-growth;
 - 3D printing in a host of new biocompatible resins including polymethyl methacrylate (PMMA)
 - Milling and traditional casting, in titanium or PEEK
- Streamline digital workflows
- Scan, then design complex solid models such as in medical applications.

- Easily and quickly explore designs and produce study models
- Readily create manufacturable files, for example testing insertion directions and draft

"We're witnessing a revolution in patient-specific manufacturing today, where implants are being designed and produced faster, more accurately and in new materials that provide enormous benefits to patients," said Joan Lockhart, vice president of marketing, at Sensable. "We're proud to showcase the innovation of our Freeform customers and demonstrate how they are using our systems to produce transformational implants and prosthetics for patients."

About Sensable

Founded in 1993, Sensable remains the leading developer of touch-enabled solutions and technology that allow users to not only see and hear an on-screen computer application, but to actually "feel" it. With 44 patents granted and over 10,000 systems installed worldwide, Sensable helps people innovate with human touch solutions. The company markets and sells the Intellifit™ Digital Restoration System for dental labs; a suite of 3D organic design solutions that includes its flagship product, Freeform; and the Phantom® and Omni™ lines of haptic devices, used in surgical simulation and planning, stroke rehabilitation, medical training, and a range of research and robotic applications. With an unparalleled commitment to partnering with customers, Sensable brings a human touch to innovating and implementing customer-centric solutions. Sensable products are available through direct and reseller channels worldwide. www.Sensable.com [1].

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Links:

[1] <http://www.sensable.com/>