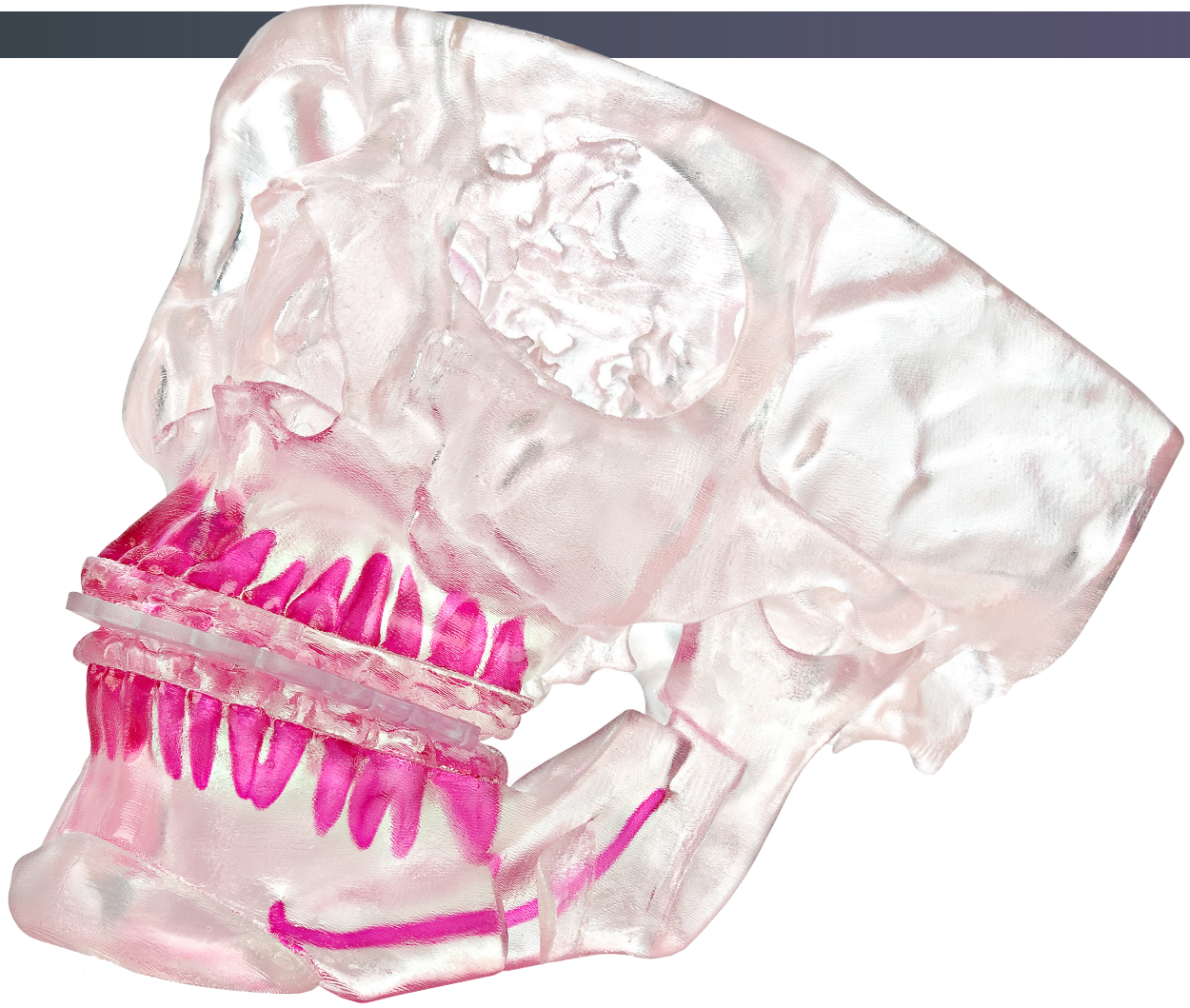
stryker

VSP®

Virtual Surgical Planning



3D SYSTEMS

Plan with confidence.

Virtual Surgical Planning

VSP is a planning service that is designed to provide surgeons with clear 3D visualisation of a patient's anatomy to develop a surgical plan prior to entering the operating room.

With years of experience in Virtual Surgical Planning (VSP), 3D Systems' expertise helps provide surgeons with improved accuracy and surgical outcomes that result in reduced time in the operating room.[1,2,3,4,5]

Following the online planning session between 3D Systems' biomedical engineers and the surgeon; patient-specific surgical guides, models and instruments are designed and 3D printed for use within the sterile field.

VSP Process

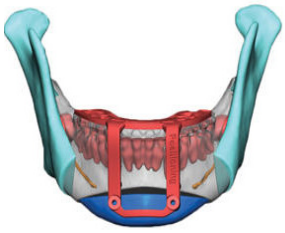
1

Medical imaging data is prepared for the webmeeting.

2

Surgical planning webmeeting takes place between the surgeon and 3D Systems engineers.

3



Patient-specific disposable instruments (splints, guides) are designed.

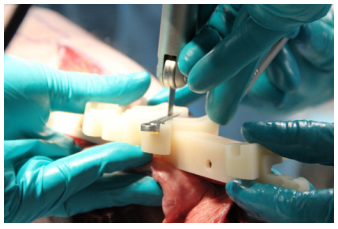
4

Instrument design is reviewed on a detailed case report and approved by surgeon.

5

3D printed models, guides and templates are manufactured and shipped.

6



Models, guides and templates are used in surgery.

VSP Reconstruction

Mandibular or maxillary reconstruction with free flaps and full jaw reconstruction.

- Reconstructed model of the anatomy showing the proposed post-operative outcome
- Patient specific resection guide(s) for the maxilla and/or mandible, to help allow accurate transfer of the digital plan
- Graft osteotomy guide for the donor site that contains precise osteotomies to create closing wedges, if needed
- Metal instrument(s) that fit into the resection or osteotomy guides, providing accurate osteotomies and eliminating debris[4,5]

VSP Orthognathic

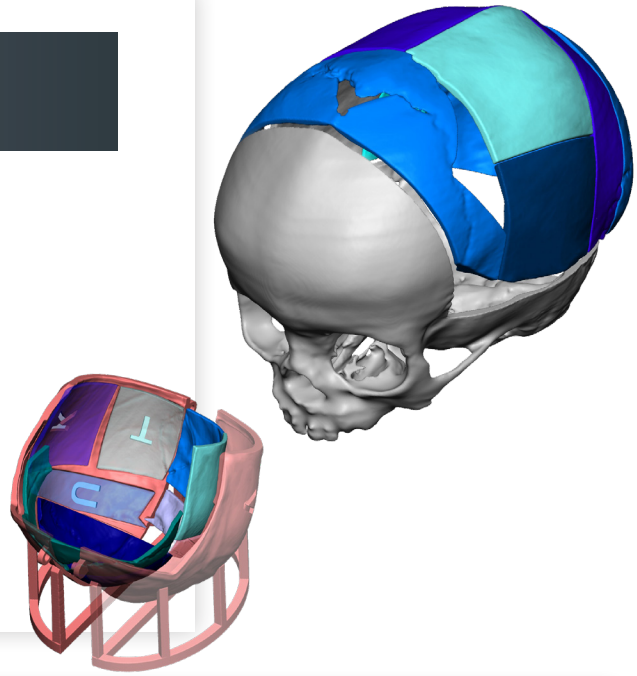
Orthognathic surgical planning with 3D printed intermediate and final splints.

- High resolution scans of the occlusal surfaces are integrated with the CT/CBCT data
- Accurate osteotomy simulation tailored to clinical requirements
- Real time 3D bony movement and cephalometric analysis
- A range of splints and guides are available to assist in accurately cutting and positioning anatomy

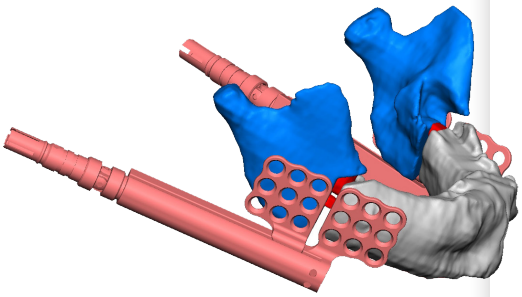
VSP Cranial

Cranial reconstruction with marking and positioning guides.

- Accurate pre-surgical visualisation of cuts and movements
- Real-time comparison to select age-matched normative anatomical contour
- Personalised marking and positioning guides for realisation of digital plan



VSP Distraction



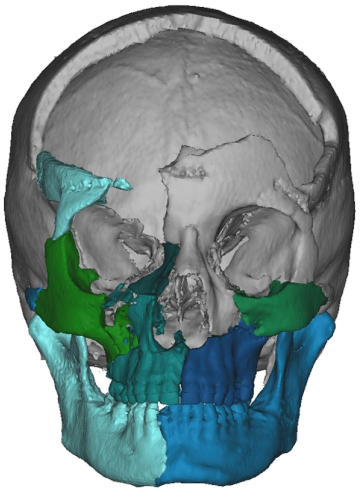
Distraction osteogenesis planning includes vector positioning and distractor placement.

- Determine the placement of osteotomies
- Create templates to guide device placement
- Facilitate pre-operative hardware setup

VSP Trauma

Trauma reduction surgery with repositioning guides and/or augmented DICOM data for navigation assistance.

- Designed to be a digitally reduced, perfected or mirrored anatomical models for a more simplified approach to reduction
- Occlusal-based positioning splints



Craniomaxillofacial

A surgeon must always rely on his or her own professional clinical judgment when deciding whether to use a particular product when treating a particular patient. Stryker does not dispense medical advice and recommends that surgeons be trained in the use of any particular product before using it in surgery.

The information presented is intended to demonstrate the breadth of Stryker product offerings. A surgeon must always refer to the package insert, product label and/or instructions for use before using any Stryker product. Products may not be available in all markets because product availability is subject to the regulatory and/or medical practices in individual markets. Please contact your Stryker representative if you have questions about the availability of Stryker products in your area.

Please visit
www.3dsystems.com/medicaldata for digital transfer of DICOM images.

References:
1. Hirsch DL, Garfein ES, Christensen AM, Weimer KA, Saadeh PB, Levine JP: Use of computer-aided design and computer-aided manufacturing to product orthognathically ideal surgical outcomes: a paradigm shift in head and neck reconstruction. J Oral Maxillofac Surg 67:2115-2122, 2009

2. McCormick S, Drew S: Virtual model surgery for efficient planning and surgical performance. J Oral Maxillofac Surg 69:638-644, 2011

3. Sink J, Hamlar D, Kademani D, Khariwala SS: Computer-aided stereolithog-raphy for presurgical planning in fibula free tissue reconstruction of the mandible. J Reconstr Microsurg 28:395-404, 2012

4. Patel A, Levine J, Brecht L, Saadeh P, Hirsch DL: Digital technologies in mandibular pathology and reconstruction. Atlas Oral Maxillofacial Surg Clin N Am 20:95-106, 2012

5. Roser SM, Ramachandra S, Blair H, Grist W, Carlson GW, Christensen AM, Weimer KA, Steed MB: The accuracy of virtual surgical planning in free fibula mandibular reconstruction: comparison of planned and final results. J Oral Maxillofac Surg 68:2824-2832, 2010

CMF-BR-175_Rev. None_18814

Printed in USA

Manufactured by:
3D Systems
5381 South Alkire Circle
Littleton, Colorado 80127 USA
t: 844.643.1001 (toll-free US/Canada)
t: 720.643.1001
f: 720.643.1009
www.3dsystems.com/healthcare
vsp@3dsystems.com
MM-647 Rev. A

Distributed by:
Stryker Australia Pty Ltd
8 Herbert Street
St Leonards, NSW, 2065
T: + 61 2 9467 1000
F: + 61 2 9467 1010

Stryker New Zealand Limited
515 Mt Wellington Highway,
Mt Wellington Auckland
T: + 64 9 573 1890
F: + 64 9 573 1891