SYNOPSYS®

Simpleware Software for Pre-Surgical Planning and 3D Printing

Key Benefits

- FDA 510(k) Cleared
- Intuitive, User-Friendly Interface
- Quick and Accurate Segmentation
- Advanced 3D Image Processing
- Develop Automated Workflows
- Expert Technical Support

Key Features

- Import Clinical Images
- Co-Register Image Data Sets
- Multiplanar Reconstruction (MPR)
- Integrate CAD Implants with Scan Data
- Measurements and Statistics
- Export to 3D Printing or 3D PDF

Why Simpleware Software?

Simpleware™ software offers a fast, easy-to-use solution for processing medical image data into 3D models for pre-surgical planning and 3D printing. Use the software to generate watertight STLs for 3D printing applications. Get more from patient-specific images by combining image and CAD data for evaluating implant positions. Take advantage of tools for visualizing and measuring image data, as well as for exporting meshes suitable for FE/CFD simulation.

Intuitive and Customizable

We pride ourselves on the ease-of-use of Simpleware software. Users new to the software can start processing clinical images within a short time frame, and very quickly visualize and identify anatomical regions of interest. Our range of fully automated, semi-automated and interactive segmentation tools allow even the most challenging image datasets to be processed efficiently. The software also offers scripting tools and plug-ins for users to customize the software and automate repetitive tasks without compromising on accuracy.

Dedicated Support and Training

Our expert technical support team are here to help you get the most out of the software, including step-by-step guidance and personalized support. We also regularly offer classroom training courses at our offices, or you can arrange customized training sessions online or at your site.

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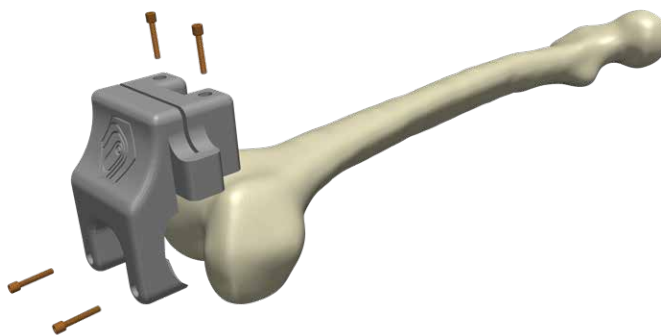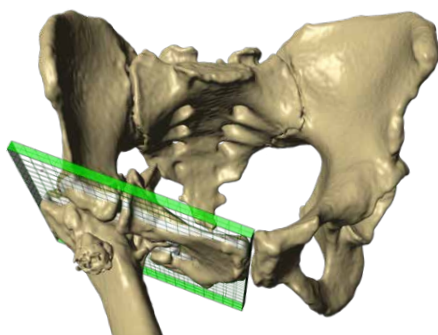
Improving Patient Outcomes with 3D Surgical Planning

Corin OPS™ (Optimized Positioning System), Australia

Corin's OPS™ technology enables surgeons to understand the individual motion profile of each patient before surgery. This gives surgeons the information required to identify, customize and deliver a personalized total hip replacement. The system provides the surgeon with an accurate laser-guided alignment system allowing the patient-specific implant orientation to be reliably achieved during surgery. 3D printed guides are created to enable the surgeon to achieve these positions as planned. Thanks to Simpleware software, the guides fit accurately to the patient's individual geometry, giving the surgeon confidence that the planned implant position will be achieved intraoperatively.
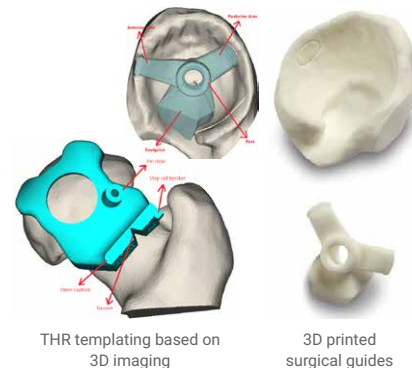
THR templating based on 3D imaging

3D printed surgical guides

Patient-Specific Knee Guide Development

*W. Theodore, **360 Knee Systems, Australia***

360 Knee Systems develops a system for customized preoperative plans and guides for optimal placement of knee implants. 3D models generated in Simpleware ScanIP are used to create patient-specific guides for surgeons. Each guide is tailored to the specific bone geometry of a patient, and is designed to help make appropriate cuts for surgery. 360 Knee Systems use these models to provide preoperative plans of the optimal placement of knee implants and the patient's bone geometry that surgeons can familiarize themselves with prior to surgery. 3D printed guides provide accurate cutting positions for the patella, femur and tibia components of the implant for each patient.


Preoperative planning of knee implants and development of placement guide

Production of High-Fidelity Patient-Specific 3D Models

*B. Chanin, **Mediprint, USA***

Mediprint offer 3D reconstruction and printing services to produce patient-specific anatomical replicas, with a focus on accuracy and efficiency for different uses. In order to equip their certified and registered radiological technologists with an FDA compliant tool, they turned to Simpleware ScanIP for producing high-fidelity 3D models. Colorful life-sized models give surgeons a hands-on feel for the scale and scope of their procedure before entering the operating room. Being able to hold the pathology, turn it in their hands to inspect, and discuss it with their peers reflects a paradigm shift in the way medical imaging is implemented in the approach to surgery.
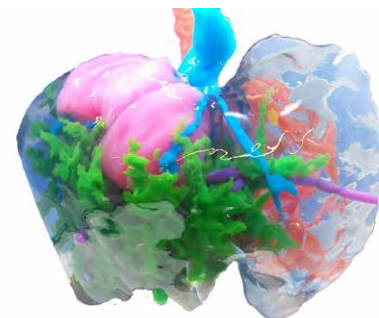

3D printed replica of a klatskin tumor provided surgeons with the scale and scope before surgery

3D Printed Model used for Kidney Stone Removal Surgery

*J. Cousins, **isodo3D, UK***

The potential of 3D printing to aid pre-surgical planning has been shown in this example of a kidney operation. Entrepreneur John Cousins used the opportunity of his kidney stone removal operation to create a 3D model from the CT scan of the kidney stone. Cousins used Simpleware ScanIP to segment the kidney and stone prior to 3D printing a physical replica. Surgeons at Southampton General Hospital were able to use the printed model as an additional reference during the procedure. The successful operation shows the potential of improving pre-surgical planning through working with an accurate reference model.
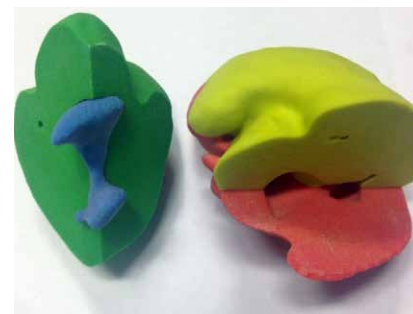
3D printed model of the kidney (green, red and yellow parts) with a 'stag head' kidney stone (blue)