

Medviso Segment 3DPrint v.3.1 Product Specification Sheet

Viewing

- 4 panel view:
 - Transversal view, sagittal view, coronal view, and object likelihood image/3D Viewer
- 2 panel view:
 - Transversal view & object likelihood image/3D Viewer
 - Sagittal view & object likelihood image/3D Viewer
 - Coronal view & object likelihood image/3D Viewer
- 1 panel view:
 - 3D Viewer
- Image viewing tools like: zooming and panning, contrast and brightness adjustment, stack cropping
- Spatial and temporal resolution image resampling
- Interactive cut planes
- Rotation and lining up image data
- Hide/show overlays like contour, segmentation, line, points, cutting planes and cross-reference lines

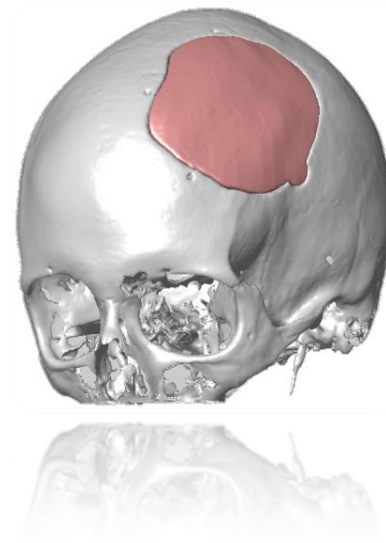
Versatile Segmentation Tools

- **Unique Intensity Thresholding** based on likelihood function with three different types of threshold (positive, negative and Gaussian) increases segmentation precision
 - **Pick-up tool** for picking up the signal intensity value from a chosen area and automatic adjustment of likelihood function
 - **Thresholds presets** for cranofacial bone, cancellous bone, contrast enhanced vessels, lung, muscles, fat, white and grey matter
- Efficient **automatic** segmentation tools:
 - **3D Pen tool** based on fast marching algorithm for easy delineation of vessels
 - **Thresholding tool** adjusted by object likelihood function for fast tissue segmentation
 - **Magic Wand tool** performs automatic segmentation according to probability map threshold
 - **ROI Interpolation over slices** for fast segmentation of tumours, aortic aneurysm
 - **Create line from points** for measurements and tracking of nerves and other long structures
- Easy to use **manual** segmentation tools that works both in 2D and 3D view:
 - **Local threshold** to draw locally within the defined pen radius according to object probability map.
 - **Local close** to locally close the edges within the defined pen radius
 - **Local patch** to locally patch the surface within the defined pen radius
 - **Local smooth** to locally smooth the object within the defined pen radius
 - **Local separate** to locally separate two objects within the defined pen radius
 - **Draw tool** to add region to segmentation within the defined pen radius
 - **Erase tool** to remove region from segmentation within the defined pen radius

- Fast and easy-to-use **split-up function** to split up adjacent objects with two clicks
- **Keep tool** to keep a part of the current object and create a new object
- **Vessel cut tool** to fast cut vessels
- **Vessel tool** for vessel segmentation
- **Line cut tools** to create inspections holes, with resection margin
- Powerful **Point tool** to add pegs/points and to create holes

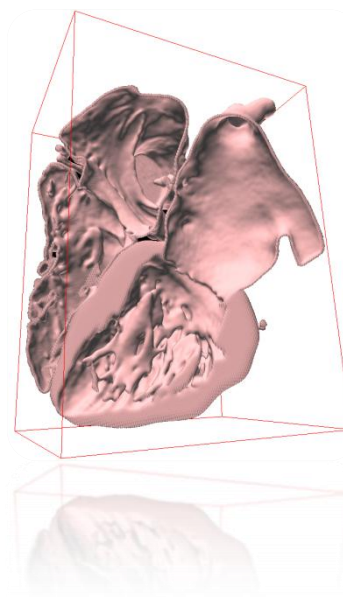
Skull Reconstruction Tool

- Intended for neurosurgical application especially for cranioplasty
 - **Automatic skull segmentation**
 - Generation of **cranioplasty implant**
 - Generation of **bone cement (PMMA) moulds** for cranioplasty
 - Honeycomb generation and ripple the object
 - Export modified DICOMs for neuronavigation
 - Face deblurring



Segmentation of left/right ventricle of the heart

- **Fully automatic segmentation** of the heart ventricles
 - Left Ventricle for CT images
 - Left/Right Ventricle for MRI images
- **Manual tools** for contour drawing like pen and interpolation points
- **Cardiac reconstruction** from transversal to short-axis stack for CT images



3D Model Editing

- Powerful tool for **sorting out objects** with **adjustable sorting threshold**
 - Keep largest part
 - Keep parts larger than threshold as separate objects
 - Remove parts smaller than threshold
- Efficient **object filling in 2D/3D**
- **Mirroring** the object
- **Morphological operation** like: erode, dilate, open and close objects
- **Boolean algebra** to perform easy operation on the objects like subtracting, merging, intersection objects, inversion

3D Model interactive Refinement

- **Smoothing function** with interactive preview
- **Hollowing function** with interactive preview
 - Inside/outside layer
 - Thickness (thin, medium, moderate, thick, extra thick and arbitrary)
- **Interactive Cutting plane functionality** in transversal, sagittal, coronal and oblique plane
 - **Import cutting plane from another object**
- **Adding Labels** on the object with adjustable font and relief
- **Adding Support structures** with adjustable thickness

- Functionality for verifying if object is printable

STL and obj file creation

- **Generation of stl and obj file** with interactive preview
 - **Color and transparency adjustment**
 - **Closing segmentation at the edge**
 - **Upsampling or simplifying mesh**

Loading and storing possibilities

- **Integrated patient database and PACS connection** (query and retrieve, sending results to PACS)
- **Plugin to Sectra PACS**
- **Advanced DICOM reader**, local storage media (hard disk, USB, and CD/DVD)
- **Importing data** from PACS, network and local storage media (hard disk, USB, and CD/DVD)
- **Storing of the segmentation** and image volume on the disc or in patient database

Regulatory Status

- **CE marking** of conformity

