

Predictive Fusion® Explained



Predictive Fusion solves the problem of fusing an MRI performed in supine position with a biopsy performed in left lateral decubitus (LLD) or dorsal lithotomy (DL) position. The technology allows a rapid fusion and reduced probe insertion time.

Competitor's Fusion Workflow:

Radiology Segment:

- Contouring of the prostate MRI, base to apex, to create a supine 3D prostate volume.

Biopsy Segment while Probe is Inserted:

- Creation of an additional 3D dataset by contouring the LLD or DL live patient image, base to apex.
- Fusion of the 3D supine MRI to the LLD or DL ultrasound 3D data set.
- Laborious, time-consuming fusion correction by the physician is required which arises from fusing the two data sets.

MIM's Fusion Workflow with Predictive Fusion Technology:

Radiology Segment:

- Contouring of the prostate MRI, base to apex, to create a supine 3D prostate volume.
- Using a virtual probe, MIM reslices the supine 3D MRI prostate volume into biopsy position. The resliced 3D MRI is the "predicted" MRI. This technology is called Predictive Fusion.

Biopsy Segment:

- Resulting from Predictive Fusion, initial placement of the rectal probe provides near-symmetry of the MRI and live ultrasound.
- Rapid fusion minimizes fusion corrections delivering both reduced procedure length and probe insertion time without sacrificing accuracy.

Original MR - Supine Position



Sector of Lesion: Right Mid

Resliced MR - Biopsy Position



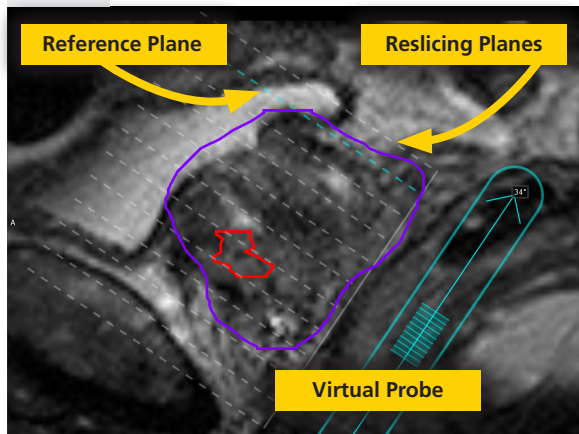
Sector of Lesion: Right Apex

Above is an example of the sector changes which occur by reslicing the prostate to the orientation of the biopsy position.

MIM ReSlicer®

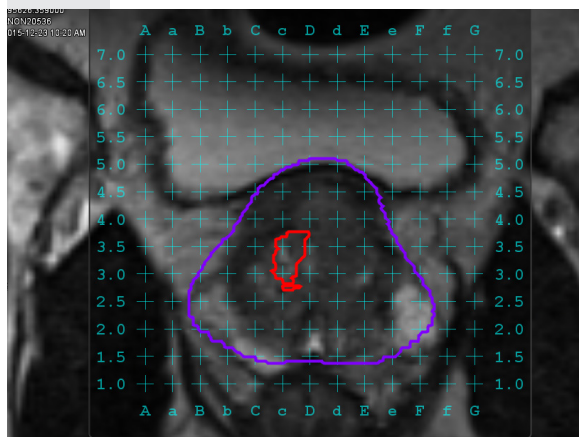
MIM presents instructions for a proper virtual probe placement.

Step 1



1. Place the virtual probe parallel to the mid-posterior wall and the reference plane at the base. The virtual probe is placed in this position to closely match the positioning of the ultrasound probe and ultrasound imaging planes during standard biopsies.

Step 2



2. In transverse, place grid so the posterior wall of the contour is approximately at line 1.0.

Step 3



3. According to the virtual probe placement, the MRI is resliced into the biopsy position. This is "predicting" the fusion of the live ultrasound with the MRI contours.