(2) T_2P is the minimum backward distance from T_2 to the same point P on r.

(3) T_3P is the minimum backward distance from another point T_3 to the same point P on r.

(1) PT_1 is the forward minimum distance from the point P on reference contour r to an observer's contour t.

T_3

T_2

(3)

Observer's contour t

(2)

T_1 (1)

Reference contour r

P

T_3P is the greatest among these three distances. Therefore, T_3P is the BLD measure at P.

Figure S2: An illustration of obtaining bidirectional local distance (BLD) at a point P representing a voxel on reference contour surface r (black curve). PT_1 is the forward minimum distance from P to an observer's contour surface t (gray curve). T_2P is the minimum backward distance from T_2 to the same point P. T_3P is the minimum backward distance from another point T_3 to the same point P. Since T_3P is the greatest among these distances, i.e., $T_3P > PT_1$ and $T_3P > T_2P$, it is established as the BLD measure at P in this example. Backward minimum distances from a number of points T_j on contour t to contour r can be obtained at P. If no backward minimum distances to r can be identified at P, then the forward minimum distance, i.e. MD from P is established as the BLD measure.