



GE Healthcare

### **Vivid™ Tutorial Series: Auto LAQ Tool**

Provides metrics for Left Atrial (LA) volumes and its strain measurements derived from 3D segmentation

- Requires images from a transthoracic echocardiogram (TTE) 4D data set obtained on a Vivid E95
  - >12 FPS, higher for higher heart rates
  - Ensure no significant reverberation or stitching artefacts
  - Ensure all LA walls are visible inside the sector
  - Analysis on Vivid™ E95 R3 or EchoPAC™ Software Only / Plug-in v203.
1. Open a 4D TTE study with a suitable volume dataset
  2. Press **measure**.
  3. Select **volume**, then **4D Auto LAQ** from the list
  4. Note image adjustment option top right of the screen, if required for optimisation
  5. The system will start with **Align Views**
  6. Images are displayed as the three apical long axis views and a short axis view
  7. Notice the positions of the crop lines and their colours corresponding to the images displayed.
  8. There are pictograms in the top righthand corner of each window to aid in checking the alignment of the views
  9. Freeze the image and adjust the frame until the mitral valve is closed
  10. **MV Centre** landmark needs to be positioned in the middle of the mitral valve annulus in each view, hold down set, drag and drop into position. This also moves the blue dotted crop line which needs to be positioned in the atrio-ventricular plane.
  11. If image alignment needs correcting, hover on the edge of the image to see a horseshoe shape for image rotation, hold down click, drag and drop into position. By hovering on the image, a multidirectional cross will appear, this allows the image to be dragged into the correct position underneath the crop lines.
  12. Once satisfied with the landmark position click on **Review**.
  13. The segmentation process should now begin, and a green contour line should be displayed around the LA endocardial border
  14. You can check segmentation through all images by hovering over the image of the short axis view to display the horseshoe. Hold on click and drag the image around and watch the 3 apical views change as you do so.
  15. To adjust select your pen size and click on region, hold, drag and drop into place. You can *undo* and *redo* at any time using the corresponding tabs.
  16. You can alter the *ED*, *ES* and *pre A* bookmarks as required by clicking and moving the ECG markers and then pressing *Set ED*, *Set ES*, or *set pre A*.
  17. Once satisfied with the tracking select the **Results** tab.
  18. The worksheet measurements are displayed with time traces and a 3D model. The time traces can be viewed for the volume and strain curves by clicking on the desired parameter in the measurements box.
  19. To store the measurements, select **Approve & Exit** or to discard select **Cancel**.

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