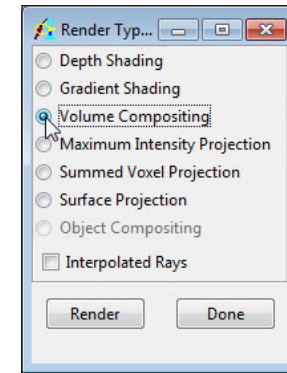


## Exercise 14 : Volume Render Tissue Map Tool

The Tissue Map tool provides a control interface that allows for the creation of unique visualizations. This exercise will demonstrate how to use the tool to generate visualizations of different tissues.

1. Load the **CT\_Heart.avw** data set from the **\$\_\BIR\images\TutorialData** directory.
2. Open the **Volume Render** module (**Display > Volume Render**).
3. Open the **Render Types** window (**Generate > Render Type**).
4. Select the **Volume Compositing** render type (figure 1). Click **Render**, then click **Done** to dismiss the window.
5. Open the **Tissue Map** tool (**Generate > Type Specific > Tissue Map**).
6. A tissue map is a mapping of the voxel values within a volume to a given color and opacity. The Tissue Map tool provides several control options to aide in the creation of a tissue map for a volume.
7. The Tissue Map tool provides four control “points” to manipulate which voxel values are mapped to specific colors and opacity (figure 2).
  - **Start [A]**: The starting voxel value within the volume mapped to a specific color (chosen from the color drop-down menu) with 0% opacity.
  - **Min [B]**: The minimum voxel value within the volume that will be mapped to a specific color and set opacity (e.g. 44%).
  - **Max [C]**: The maximum voxel value within the volume that will be mapped to a specific color and set opacity (e.g. 44%).
  - **End [D]**: The ending voxel value within the volume mapped to a specific color with 0% opacity.
8. Click **Render** to view the rendering with the default parameters (displayed in the main Volume Render window).



The Tissue Map tool is **only** available with the Volume Compositing render type

Figure 1

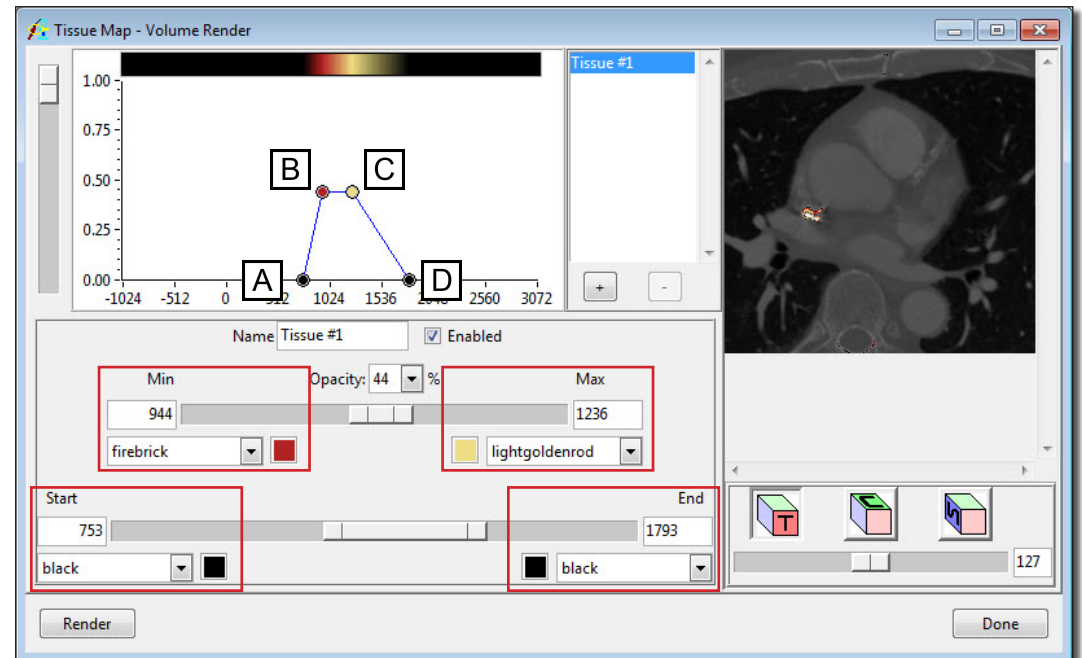


Figure 2

## Exercise 14 : Volume Render Tissue Map

9. Use the slider bars [A] in the Tissue Map tool to set the following (figure 3):

- **Start: 157**
- **Min: 200**
- **Max: 500**
- **End: 3072**



10. Select **60** from the **Opacity** drop-down menu [B]. Click **Render** to view the effect of the changes (figure 4).

11. Now, experiment by moving the control points in the graphical display [C]. Click **Render** as desired.

12. Right-click in the graphical display and select **Show Histogram**; the volume histogram will be calculated and displayed. This option may help determine voxel values associated with tissues.

13. Several default tissue maps are also available, right-click in the graphical display and choose **Default Tissue Maps > CT1**; once loaded, click **Render** (figure 5).



14. Experiment with adding a second tissue to the tissue map by clicking the + button [D] to the right of the graphical display. Click **Render** as desired to see the effect.
15. Close the Volume Render module before proceeding to the next exercise.

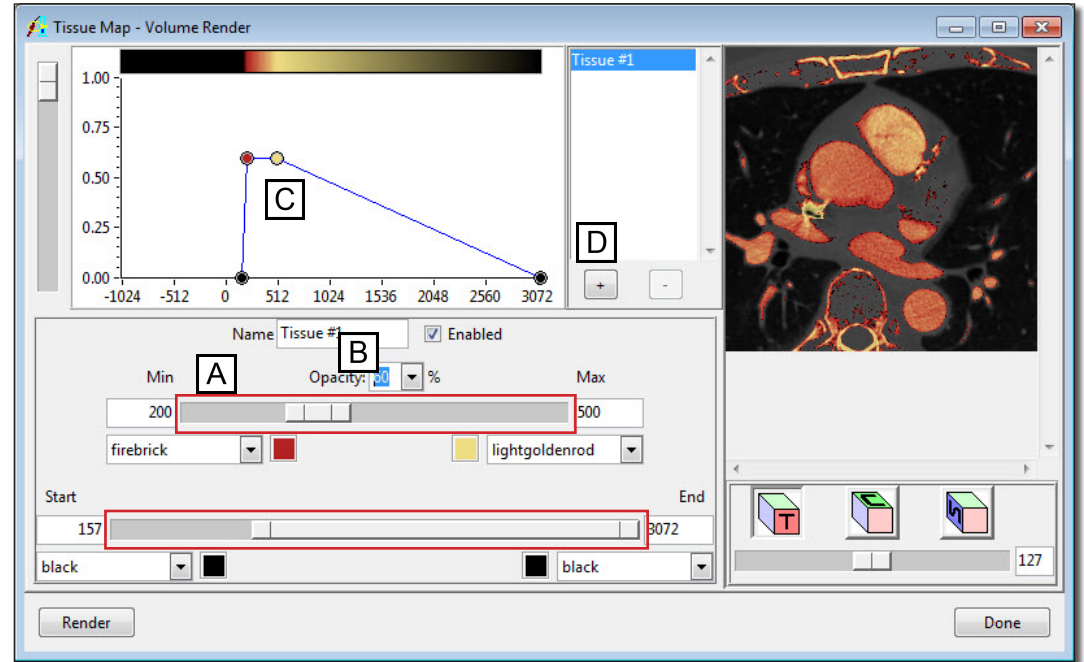


Figure 3



Figure 4



Figure 5