CT Viewer Fusion Mode

The Fusion viewing mode is an available option that allows you to view PET and SPECT images (and PET/CT and SPECT/CT images).

3000067186691_A/881 * 2021-06-30

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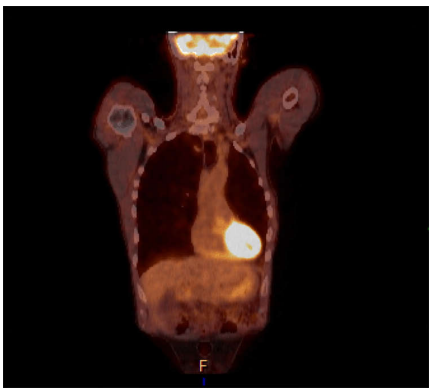
NOTICE

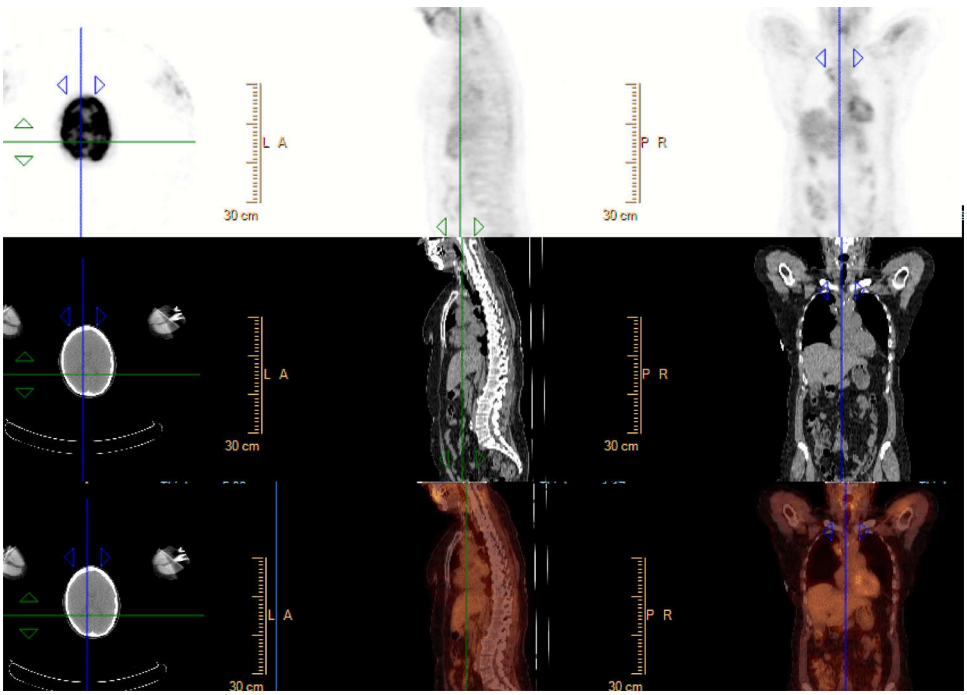
For detailed procedures for using the CT Viewer functions, see:

- section “CT Viewer 2D Mode” on page 13
- section “CT Viewer Slab Mode” on page 20
- section “CT Viewer Volume Mode” on page 38
- section “CT Viewer Endo Mode” on page 49

You can use the standard CT Viewer functions (described in the previous sections) on NM images, and you can fuse NM images with CT images.

NM image	CT image	Fused NM+CT image
		

NM data can be fused into the CT data and viewed in various layouts (for example, in the “NM +CT+Fused 3x3” layout below).



3000067186691_A/881 * 2021-06-30

Load Multiple Studies in Application

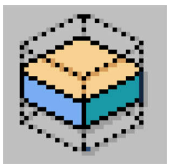
To load multiple studies in the application:

1. Use the **Ctrl** key when selecting studies from the Directory list.
2. Select the application from the Applications menu.
3. Confirm the studies are from the same patient.

NOTICE

When loading data into an application, ensure the orientation shown on the images is consistent with the images' appearance. This precaution is required for data that contains wrong orientation information because the data will be incorrectly presented within the application.

Load NM Studies

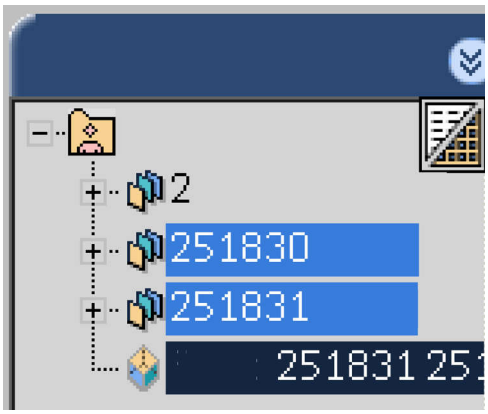


All PET and SPECT studies loaded into the IntelliSpace Portal will appear in the patient directory and the series tab. If your system has the optionally available Fusion viewing mode, select the desired study and click the CT Viewer icon in the control panel.

To easily identify nuclear medicine, PET and SPECT studies, use the right click context menu to add the “Modality” column to the patient directory display.

Work with Fused Images

Select one CT series and one PET/SPECT series from the list in the Series tab, in either Slab or Volume scenes (make sure other series are not selected).

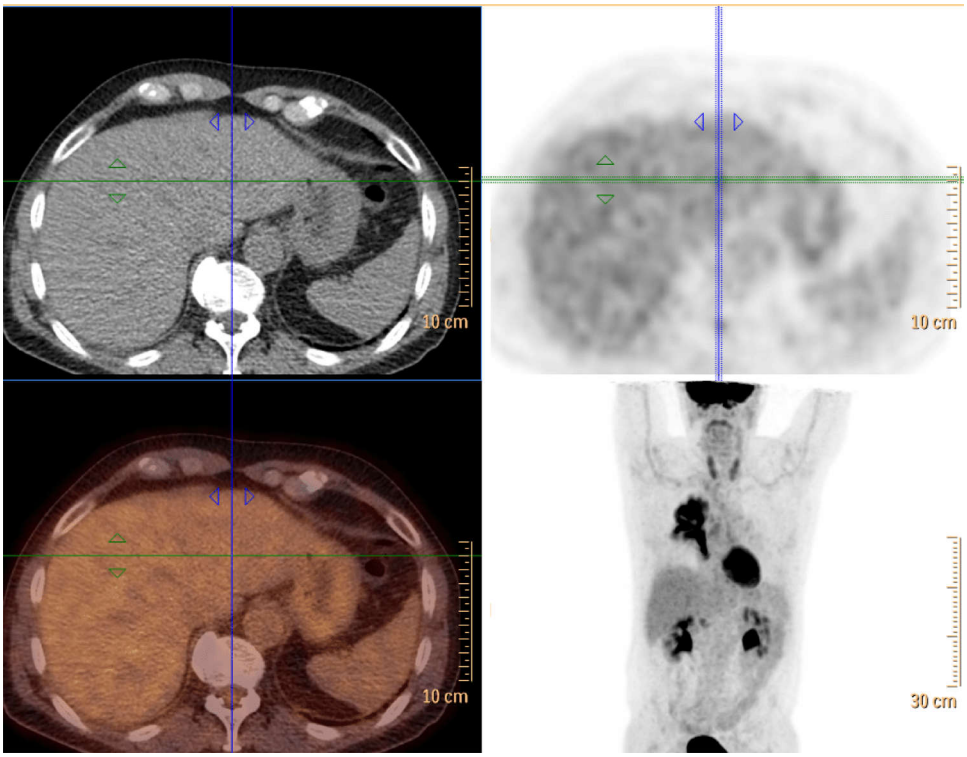


Activate the Function tab drop-down and click Fusion.

3000067186691_A/881 * 2021-06-30

The fused series will be added to the series list.

The CT Viewer automatically enters the “compare” mode, with a viewport layout that shows the fused series along with the CT and NM data that was used to create the fused images, as shown in the “NM+CT+fused axial” layout below.



CT Fusion Viewer Layouts

The Fusion Layouts are active when a multi-modality study is loaded. The colors used in the layouts indicate the type of image. To access the Fusion layouts, use the Layout drop down. Several layouts can be assembled using the screen and protocol layout and via linking.

3000067186691_A/881 * 2021-06-30

	White icon identifies a PET/SPECT image.
	Black icon identifies CT image.
	Colored icon identifies a fused image.

CT Fusion Viewer Tools

The Fusion function tab contains specialized tools for working with fused series.

Fusion Colormap and Blending

PET/SPECT color map. Click the left and right arrows to change the color map of the PET/SPECT series (not the fused series). Repeated clicking scrolls through the available color maps.

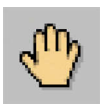
Fusion color map. Click the left and right arrows to change the color map of the PET/SPECT data on the fused series.

Blending. The blending slider controls the proportion of the two image types (CT and PET/SPECT) in the display.

- While observing the fused display, move the blending slider to create the desired image.
- In the slider's farthest left position, the CT image is most prominent.
- In the slider's farthest right position, the PET/SPECT image is most prominent.

Image Registration Correction

The PET/SPECT image can be offset and/or rotated to any direction or orientation relative to the CT image using two methods: 1) interactively, using the Pan and Rotate buttons in the Fusion tab and 2) using the Type-in Offset and Angle function.

Pan	In this mode of registration, you can manually change the lateral positioning of the PET/SPECT image data by dragging it on the display screen. 
Rotate	In this mode of registration, you can manually change the rotational positioning of the PET/SPECT image data by dragging the overlay on the display screen.

The CT image data is fixed in position. You can pan or rotate the PET/SPECT data in any slab viewport that displays the fused series.

Manually Enter Parameters

Translation offset (mm)	By typing in offset parameters, you can position the PET/SPECT image in any direction along the X, Y, and Z axes.
Rotation Angle (degrees)	By typing in angle parameters, you can rotate the PET/SPECT image data in any direction around the X, Y, and Z axes.

To move or rotate the image data in the reverse direction, type in the “minus” sign (the “-” character on the keyboard).

Undo/Redo Registration

Click this button to Undo the last registration operation. Click the drop-down arrow to select the Redo function, which restores the last Undo.

Reset

Click this button to reset the PET/SPECT image data to its default location.

Window and Rendering Parameters

To change the window setting of PET and SPECT images in the CT Viewer, set the highest and lowest window values of the displayed image as follows:

- To change the Low value, hold down the middle mouse button and drag the mouse left and right.
- To change the High value, hold down the middle mouse button and drag the mouse up and down.

To change CT window settings on fused images, hold down the <Ctrl> and <Shift> keys and the middle mouse button, and drag the mouse left and right, and up and down.

3000067186691_A/881 * 2021-06-30

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