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# *Vitrear<sup>®</sup> 2*

*version 4.0*

## *Fusion7D<sup>™</sup>*

### *User Guide*



**VITAL**

*The image of understanding*

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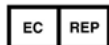
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## Safety and Regulatory Considerations

PLEASE READ THIS SECTION CAREFULLY BEFORE USING THE VITREA 2 FUSION7D™ OPTION.

This section contains information that is essential for the safe and effective use of the Vitrea 2 Fusion7D option. You must understand this information before using this application.

For general Vitrea Safety and Regulatory Considerations, refer to the Safety and Regulatory Considerations section of the *Basic Vitrea 2* manual.

For detailed Safety and Regulatory Considerations for Fusion7D, see the *Fusion7D User Guide* or online Help, located under the Fusion7D software Help menu.

### Intended Use

The Vitrea 2 Fusion7D option is intended for registering pairs of anatomical and functional volumetric images (for example, MRI-SPECT, MRI-PET, CT-SPECT, CT-PET), or pairs of anatomical volumetric images (for example, MRI-MRI, CT-CT, and MRI-CT) as a means to ease the comparison of image data. The result of the registration operations aims to help the clinician obtain a better understanding of the joint information that would otherwise have to be compared separately. This is useful for a wide range of clinical and therapeutic applications. It is important to note that the clinician retains the ultimate responsibility for making the pertinent diagnosis based on their standard procedures, including visual comparison of the separate unregistered images. Fusion7D is a complement to these standard procedures.



**CAUTION:** *The Fusion platform is designed and approved for use as a visualization tool only. Siemens Molecular and Vital Images assume no liability for any misuse or clinical outcome resulting from the use of the software as an aid to diagnosis. The software is made available to the user with the understanding that the software is only an aid or adjunct to processes or decisions that can be made without the use of the software.*

This manual is intended to be used by customers who have purchased the separately-licensed Vitrea 2 Fusion7D option. It assumes a working knowledge of Vitrea and familiarity with the concepts covered in the *Basic Vitrea 2* manual.

### Contact Us

- For general, non-technical support questions, contact us through our Web site: [www.vitalimages.com](http://www.vitalimages.com).
- For customer technical support, contact us using one of these methods:
  - In the U.S., call the Customer Support line at 1.800.208.3005.
  - Outside the U.S., contact your Vital Images distributor.
  - Go to <http://support.vitalimages.com/requestinfo.aspx> and perform the following steps:

- a In the **Destination** field, select **Technical Questions and Support Issues**.
  - b Fill out the rest of the form.
  - c Click **Send**.
- Send an email to [support@vitalimages.com](mailto:support@vitalimages.com).
  - To provide feedback about this document or other Vital Images product documentation, send an email to [feedback@vitalimages.com](mailto:feedback@vitalimages.com).

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## Overview

Vitre@ 2 (Vitre@) is advanced medical imaging software for diagnostic evaluation of computed tomography (CT) and magnetic resonance (MR) image data. Vitre@ features real-time navigation of 3D volume data, permitting the user to create two- and three-dimensional views of human anatomy and to interactively navigate within these images to better visualize and understand internal structures and disease conditions.

Siemens Molecular Imaging Fusion7D software is designed for registering pairs of anatomical and functional volumetric images (e.g. MRI-SPECT, MRI-PET, CT-SPECT, CT-PET), or pairs of anatomical volumetric images (e.g. MRI-MRI, CT-CT and MRI-CT) as a means to ease the comparison of image volume data by the clinician.

Vital Images has partnered with Siemens Molecular to develop a clinically-focused option that seamlessly launches the Fusion7D software from within the Vitre@ software.

The separately-licensed Vitre@ 2 Fusion 7D option allows users to fuse images taken from different imaging modalities and compare images taken from the same modality, but acquired at different times. This can enable you to do the following:

- Best use comparative information from images from different modalities
- Monitor the change in a disease state
- Evaluate the effects of a therapy

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## Launching Fusion7D from Vitre@

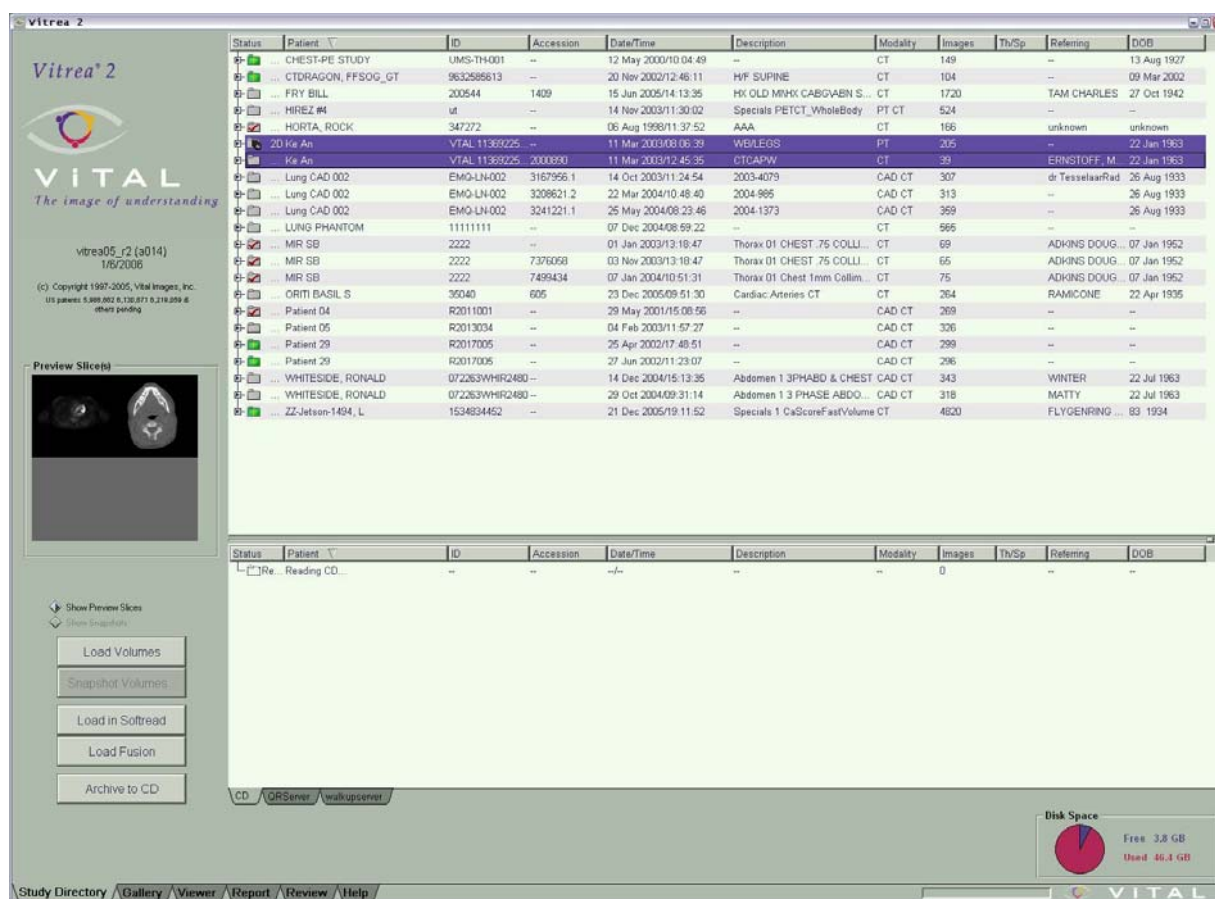
1. On the Vitre@ Study Directory, select up to three dataset(s) you want to fuse.

**NOTE:** *The source and target datasets can be any combination of the following modalities: CT, MR, PET, NM.*

If you fuse two datasets, the default source study is either the oldest study, when fusing two anatomical (CT/MR, CT/CT, MR/MR) studies, or the anatomical study, when fusing one anatomical study with one functional

study (CT/PET). However, after you select the studies, you have the opportunity to switch the source and target studies.

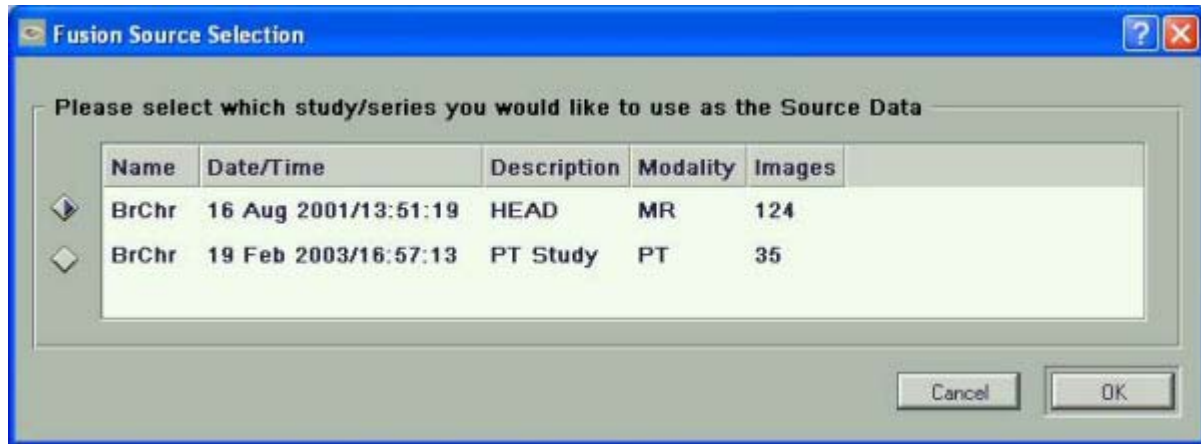
If you fuse three datasets, they must be a combination of one CT or MR study (the ‘source’ dataset), one PET emission dataset (the ‘target’ dataset), and one PET transmission dataset. The PET transmission dataset must have been acquired at the same time as the PET emission dataset, and must contain the same number of slices. In this case, the PET transmission dataset is referred to as the ‘auxiliary’ dataset and while it will not be displayed by default, it will be used to by the software during any registration operations. PET transmission datasets are normally only generated by standalone PET scanners; most PET/CT combined cameras do not generate PET transmission data.



## 2. Click Load Fusion.

If you are fusing only two studies, the Fusion Source Selection dialog box displays.

**NOTE:** If you are fusing more than two studies, this dialog box will not display.



- In the Fusion Source Selection dialog box, do the following steps:
  - a Select the study you want to use as the source.
  - b Click **OK**.

The Fusion7D application launches.

## Working in Fusion7D

For instructions for working in Fusion7D, refer to the *Fusion7D User Guide* or the Fusion 7D online *Help*.

- To access Fusion7D Help from within the Fusion7D software, click on the Help menu, and select **Fusion7D Help**, or press F1.

Within Fusion7D, you can perform the following tasks:

- Save the dataset for reimport into Vitrea.
- Save fused volumes for reimport into Vitrea and loading into Softread or Study Viewer.
- Take snapshots for Vitrea reporting purposes or for restoring in Fusion7D. The Fusion7D application saves the name of the datasets and any transformations done to fuse them.

## Restoring Snapshots to Fusion7D

- On the Vitrea Report page, drag the fusion thumbnail to the **Restore** icon. The Fusion7D application launches, and brings you back to the exact workflow where you took the snapshot.

## ***Returning to Vitrea from Fusion7D***

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- From Fusion7D, click **Return to Vitrea** on the application toolbar. Fusion7D minimizes and you return to the Vitrea Report page.

## ***Viewing Fused Volumes in Study Viewer or Softread***

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1. On the Study Directory, right-click the patient volume containing the fused images.
2. Select **Load in Study Viewer** or **Load in Softread**.