

How to use the FIDEX Demo Workstation (Aug 13, 2012)

This is a promotional piece designed to demonstrate the imaging capabilities of FIDEX, our 3-in-1 veterinary x-Ray scanner. Let's jump right in.

1. How to open a Patient/Study for viewing

The FIDEX workstation comes up in DB mode (DB = data base). This is a list with the cases stored with the application, and accessible for review. Note that the DB box in the upper right hand corner is highlighted. We will now get you started on the basic functions which are DR (digital Radiography), FL (Fluoroscopy) and CT.

2. How to open and view a DR image

Select e.g. the pet Passion by expanding the + sign on the left.

By opening the case, the DB displays the structure of the record of images. Here, one can see a study called Thorax with a single DR image in it. The DR image exists as a DICOM object (DR), and also as a screenshot. Double-click on the DR box to open the DICOM image.

The DR image will appear in the main window. Note that the right screen is now in DR/DR View state with various buttons to manipulate the image and make measurements.

The most important image viewing tool is brightness and contrast. Move the right mouse button to the right to increase brightness, and move it down to increase contrast. You can also work with the Window and Level sliders on the right screen.

3. How to open and view a Fluoroscopy scene

Go back to DB, and select the first case Fibi. Double-click on the FL box to start playback of this case, tracheal stent. Note that the right screen is now in FL/Playback mode.

You can manipulate the frames just like in DR, and adjust window/level with the right mouse button. The elements in the lower right hand corner allow pausing and single step operation.

4. How to open and view a CT study

Go back to DB, and select case 5, German Shepherd. It is a CT contrast study of a large dog. The software is now in CT Visualization/MIP-MPR mode.

The study will open with a coronal cut in the main window. The other orthogonal cuts are shown in the three smaller windows on the left.

W/L contrast/brightness control with the right mouse button is the same as in DR and FL. Alternatively, one can work on the histogram below the main window.

You can scroll through the slices using the mouse wheel. You can also grab the image in the axial, sagittal or coronal cuts by placing the cursor into the cross-hair center of the small window, use left mouse button and drag left or right and up and down. You will see that the three images are coupled in 3-D space.

The sagittal or axial view can be brought into the main window by double-clicking.

The three planes are always orthogonal to each other, but do not have to be parallel to the scanner coordinates. It is easy to make oblique cuts using the small windows: grab one of the extensions of the coordinate axis to rotate the image. By repeated rotations one can make double-oblique cuts as well.

5. MPR images

The MPR images (multi-planar reformat) are exactly one pixel layer thick, and depend on the scan parameters used to acquire the data. This is not always the best choice for viewing. For example, soft tissue is best appreciated in thicker slices (or slabs = several averaged slices) in order to reduce pixel noise. Click on SLICE (default) and then SLAB in the middle of the right screen. The thickness of the slab may be controlled by overtyping the slab thickness parameter shown on the left top of the main window. Thick slabs can also change their width in the small windows by moving the broken lines.

6. MPR and MIP

In slab mode, one may also use the MIP function (MIP = maximum intensity projection). This is very useful in cases of e.g. blood vessels with contrast, which run within a slab. The MIP function will increase contrast considerably.

7. How to make Volume Rendered Images

FIDEX provides Volume Rendering of 3-D images. This function is accessed through the 3D button on the bottom of the main window.

Volume rendering will make colorful, almost life-like semi-transparent images of the scan volume. This is achieved by mapping density values (as shown in the blue histogram on the bottom) to color and opacity. For example, bones with high density are typically shown white and opaque. And lung tissue with its low density may be light blue and transparent. This opacity function is given by templates on the right screen. You can change them in various ways.

Other important manipulations of volume rendered images:

You can rotate the object using the left mouse button, or the shift key + left mouse button.

Zoom is accessible through the mouse wheel.

Cut planes are often used to cut away image parts that may obscure what is of interest. Select Clipping Planes in the right screen, grab the desired plane by its mid-point and move it perpendicularly to its surface. You can also rotate the object within the 'cage' of clipping planes by selecting one of the edges and rotation axis.

Thank you for your attention. If the images shown here appear to fit with your professional needs and you need more information about our FIDEX x-ray scanner, please contact us at www.animage.com, or give us a call at (925) 416-1900.