



Chameleon Information Management Services Limited

INFOFLEX VERSION 5

Images in InfoFlex

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1 OVERVIEW

These notes describe how to invoke and utilise Infoflex's Image functions.

The principal advantage with the addition of imaging functionality to the Infoflex system is to allow users of Infoflex to add a series of images and attach these images to a particular subject during an event such as an appointment.

In Design Management the designer of the data entry screens will add the image item to the Domain view and configure it in accordance with the user requirements.

In Data Entry the user may add images directly from the file system or they may capture images from a capture device (if fitted) such as the Leutron Pic Port capture card or Matrox card. It is assumed in this document that if Image capture is used, the Image capture hardware and software have already been installed. If not please refer to the installation notes.

Once the images have been added to the InfoFlex system they may be viewed in the Data Entry module, in screen or grid view, and inspected further within the InfoFlex Image Viewer application which is launched from the Data Entry module. They can also be removed using the Image Viewer application.

The images can be annotated with text and drawings using the InfoFlex Image Viewer application or directly in the Data Entry screen. The annotations are stored with the image and superimposed on top of the image.

The images can also be used in letters, documents and reports, the user can select which images should appear in a document.

The order of the images can be changed as necessary.

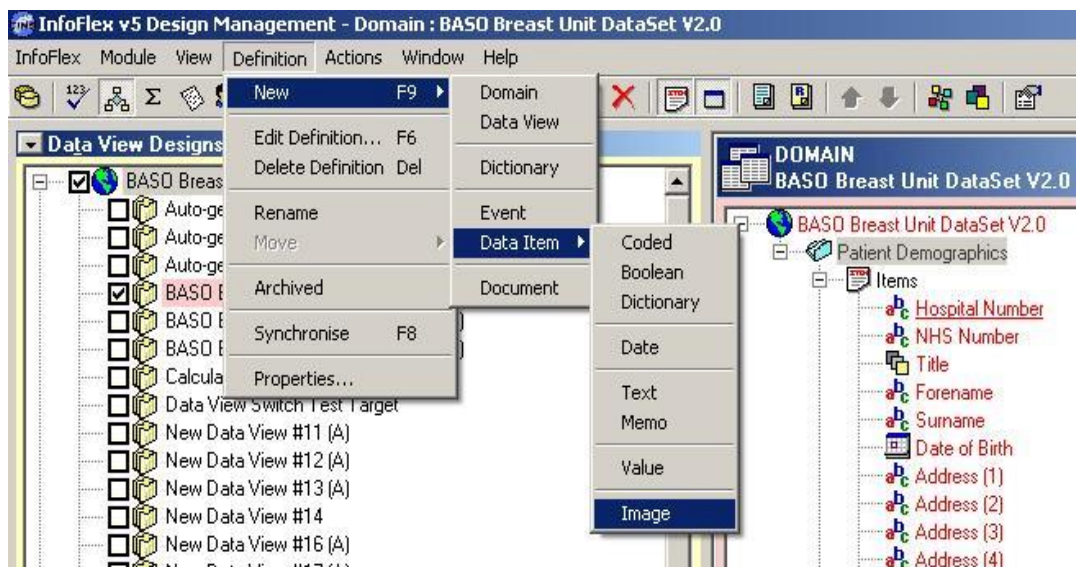
2 IMAGE ITEMS IN INFOFLEX

2.1 How to Add an Image Data item to a Domain

Carry out the following steps in the Design Management module.

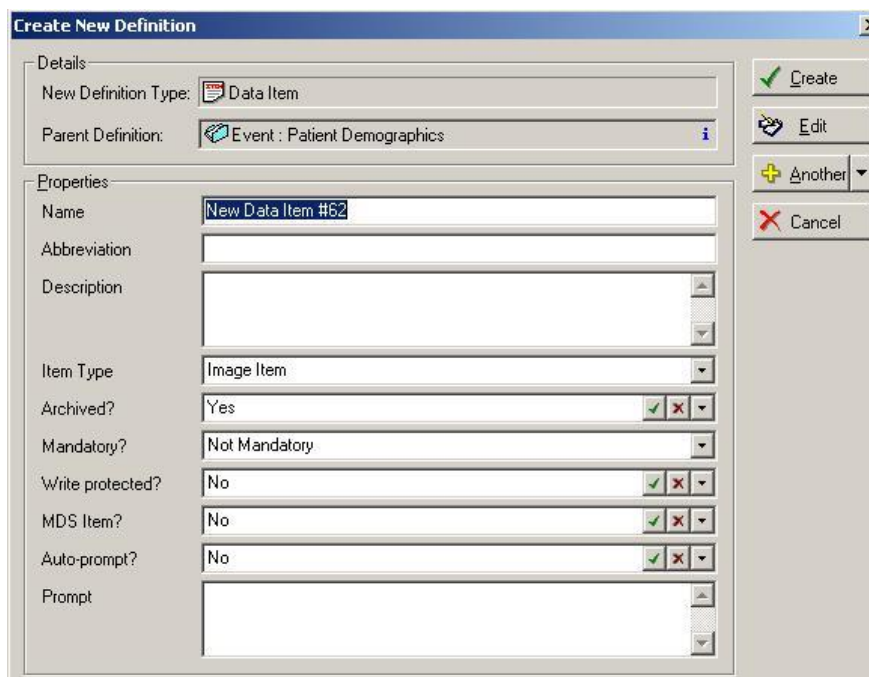
Step 1.

Select the menu item Definition→New→Data Item→Image



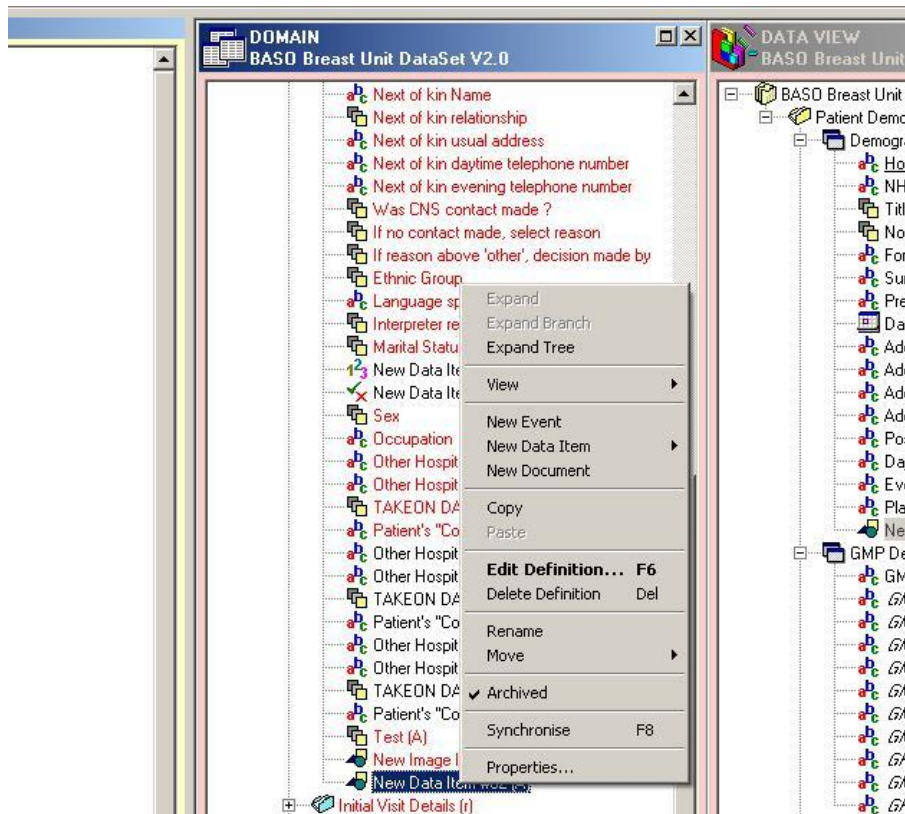
Step 2.

Choose a name for the item and press **Create** button...



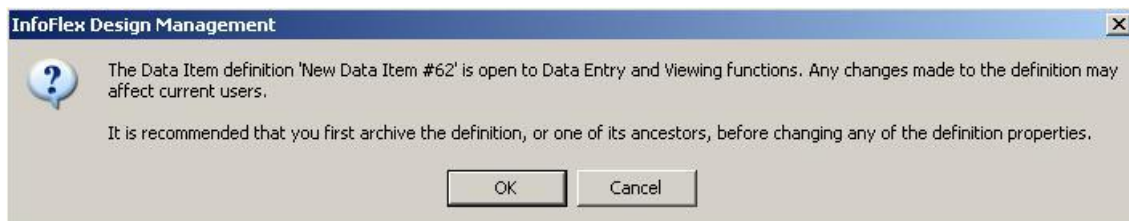
Step 3

Edit Definition from the Menu...



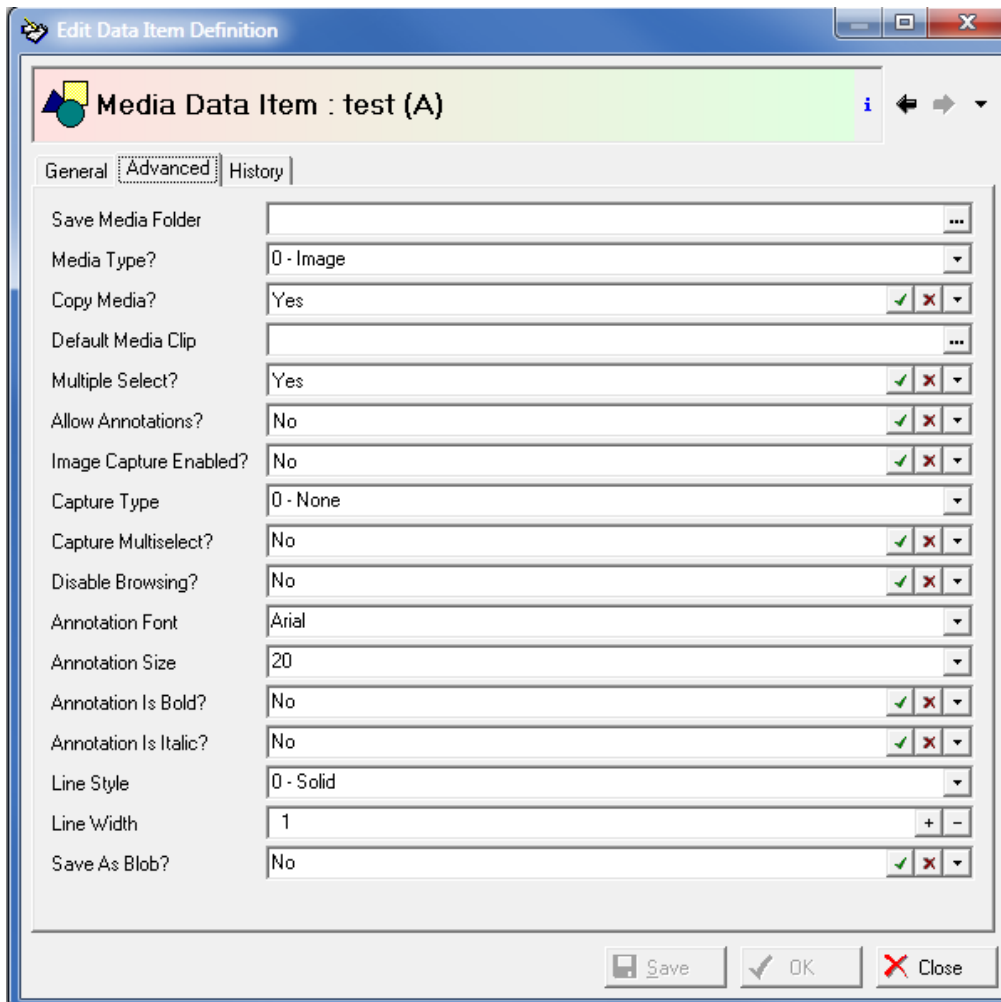
Step 4

Press OK and continue



Step 5

Select **Advanced** tab and edit properties. These properties have an impact on the way the image item will be seen in Data Entry. See the Design Management 1 user guide section 6.7.1 for a full explanation of the properties.

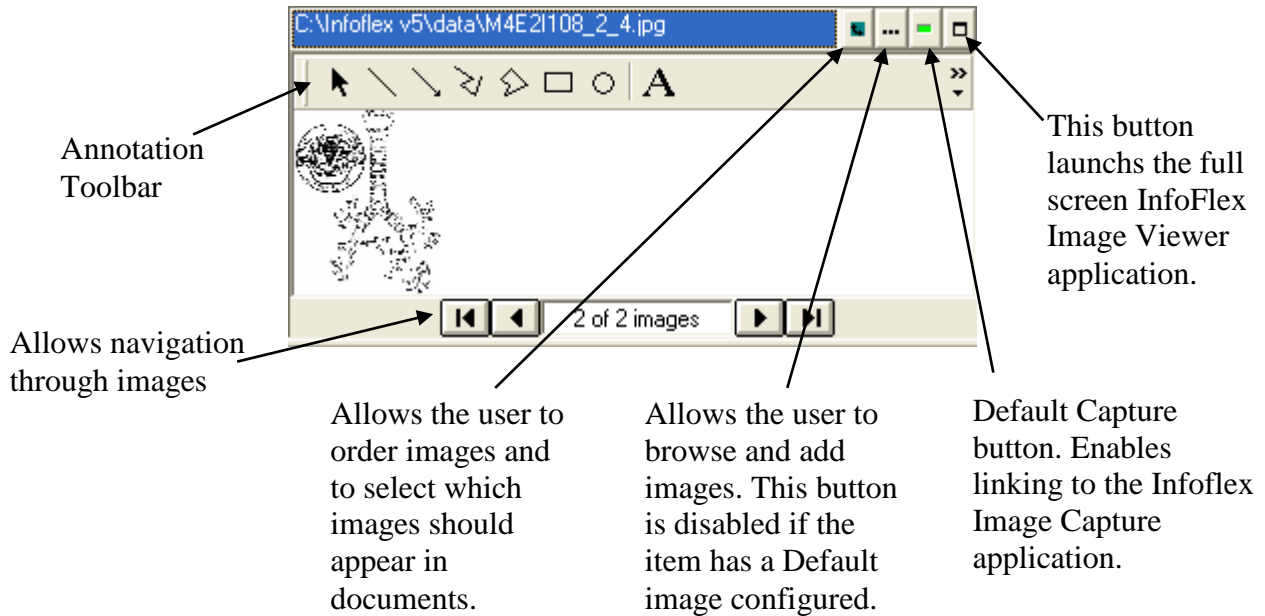


Step 6

Unarchive the image item and save it.

2.2 Using Images in Data Entry

Open the Data entry screen which contains the image item.



The user browses for images, or uses image capture to add new images.

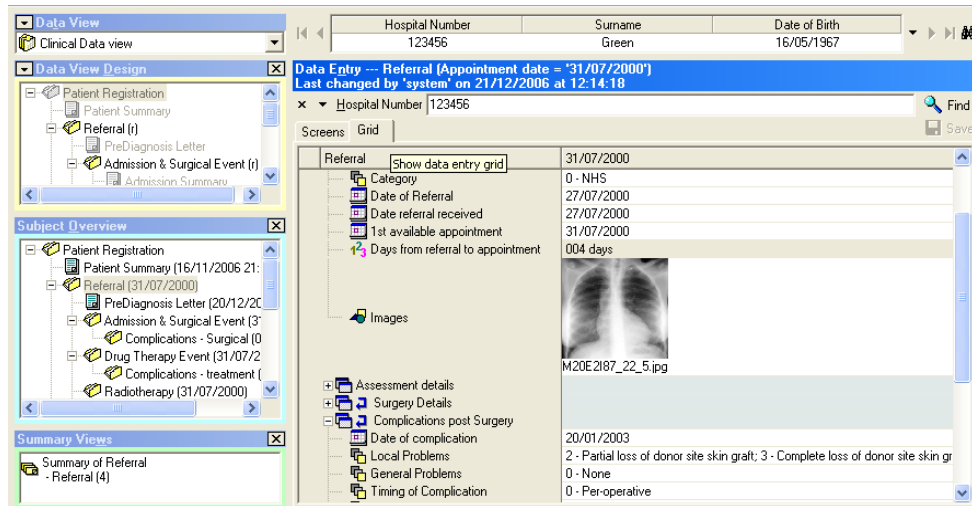
When browsing for images, files with extensions **.bmp**, **.jpg** and **.wmf** are looked for, however images saved as progressive jpgs cannot be used. More than one image can be saved in an image item as long as the **Multiple Select?** property is **Yes**.

Once the event is saved, the images are stored in the image data item. The images can be annotated in the Data Entry Screen or Grid or in the **Image Viewer** application (see below), and can be deleted from there. The images can be re-ordered and selected for printing using the **Order Images** dialog (see below).

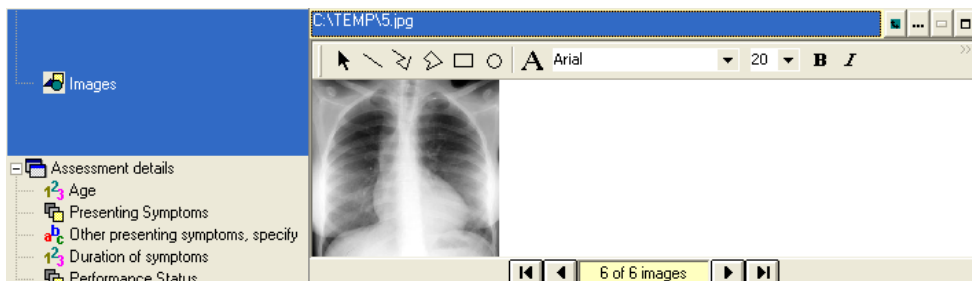
Any change to the image item, including selecting which image is currently visible, will cause the **Save** button for the event to go red indicating a save is required.

2.3 Data Entry Grid

The Data Entry Grid has been updated so that image items will now display their currently selected image in the grid cell along with the selected image file name. The selected image will be resized to fit the height of the grid cell, although the aspect ratio of the image will be maintained. The row height of image item rows in the data grid has also been increased so that a decent size thumbnail of the selected image will be shown.

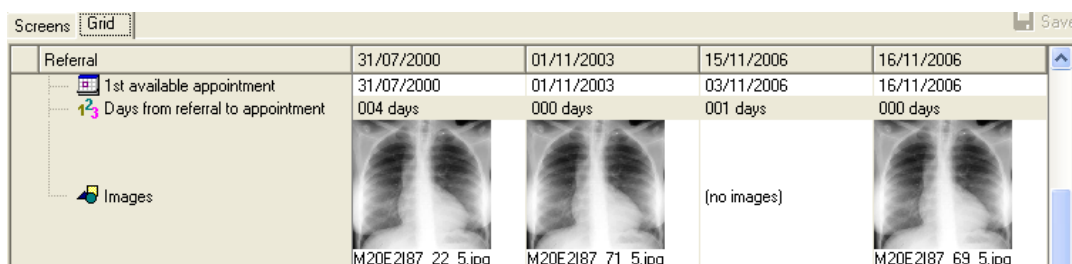


Also, the increased row height means that the complete image control, rather than just the image control edit box, is now shown when selecting an image item cell in the grid. Note that an increased size of image control can be shown by pressing the F4 key, although this functionality has always been available. See screenshot below for effect of pressing F4:




2.4 Viewing Multiple Images

Images from the same data item across different repeat events (within one subject) can be viewed simultaneously in the Data Grid. This is achieved by selecting the **Select Similar Events** menu item from the Event menu while editing an event containing the image item in the Data Grid. This will place the images next to each other.



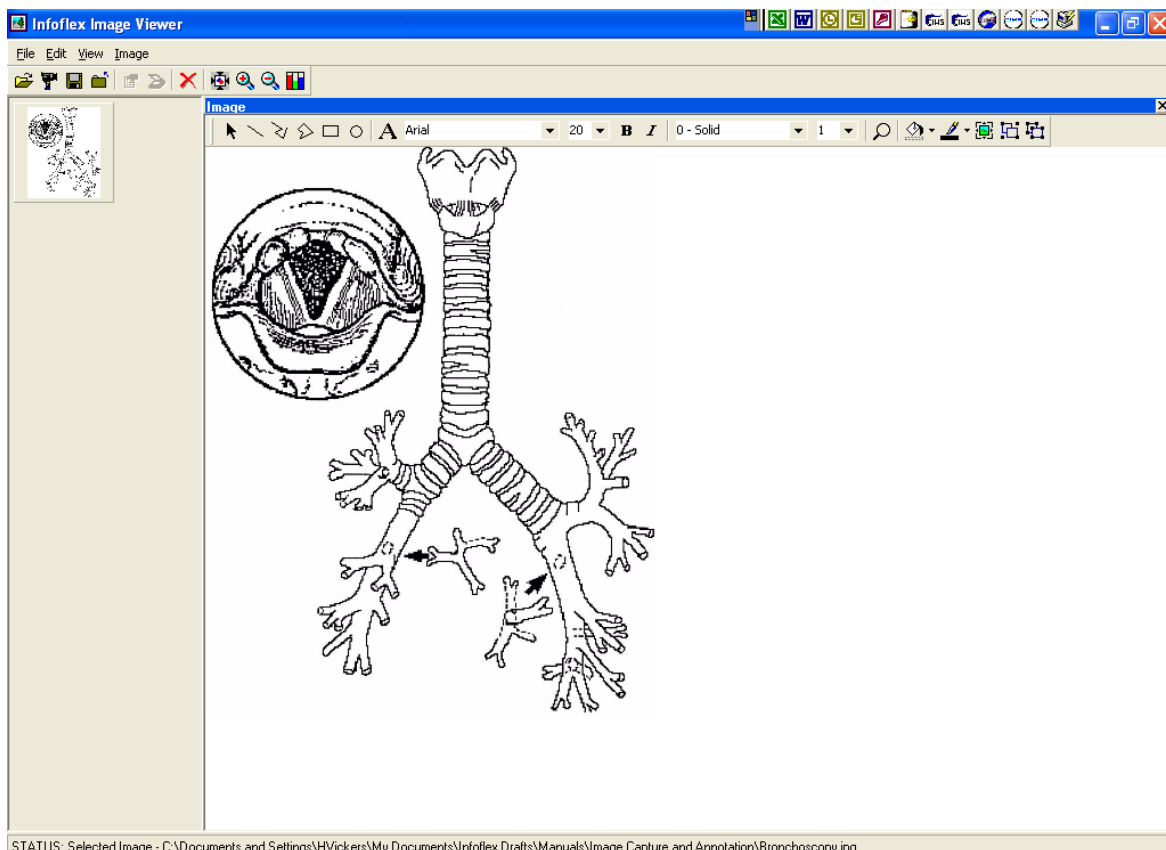
2.5 InfoFlex Image Viewer application.


In the image control in Data Entry pressing the  button opens the Image Viewer application.

This application allows the annotation of images. The annotations are stored with the image and superimposed on top of the image. The font and drawing properties are stored with each image.

The menu bar allows the user to use different drawing tools such as text, lines, circles. The user has control as to which line style to use, fill colour etc. Annotations can be removed by selecting them individually and pressing the **Delete** button.

When the annotation is complete the user may close the application which will re-enter the main InfoFlex data entry screen. At this point the user will be prompted to save the actions if the image item has changed.

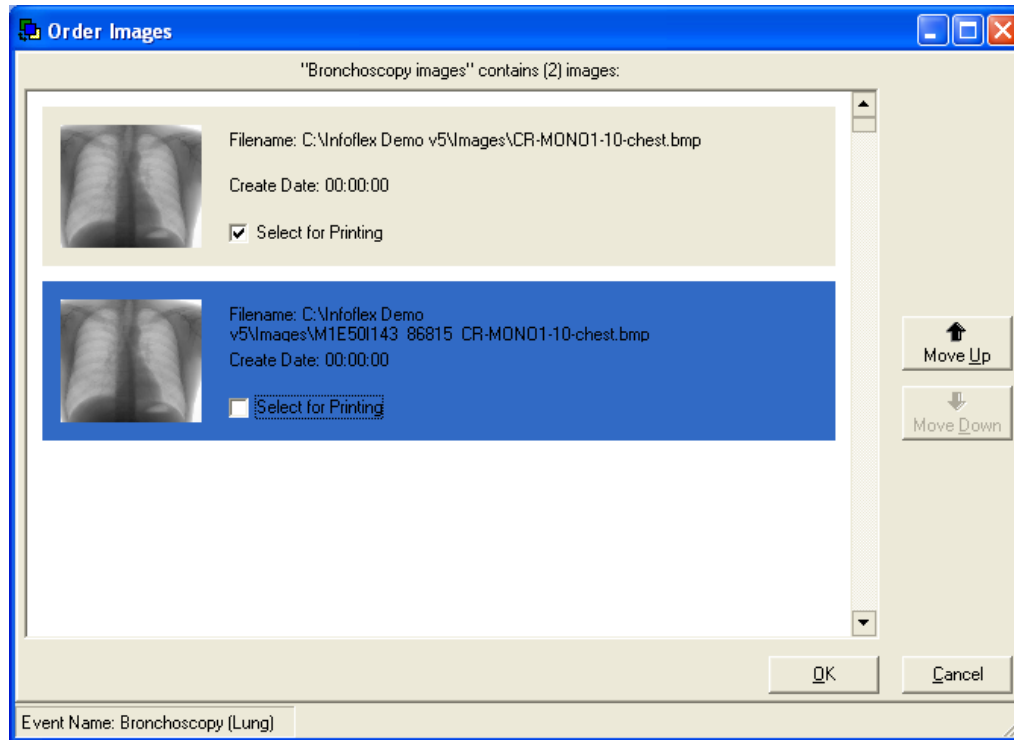


Images can also be deleted from the Image Viewer application. The user can select the image and press the delete button or use the toolbar button marked: 

Changes made in the Image Viewer application should be saved before closing the window.

2.6 Order Images dialog

Selecting the  button opens the Order Images dialog.



The Order Images dialog allows images within an image data item to be re-ordered and to be flagged as suitable for printing. The user is able to select which images can appear in documents. They will also be able to select the order that the images will appear in the image item.

The dialog appears allowing the user to re-order the images within the data item using the **Move Up** and **Move Down** buttons. The user can also tick the **Select for Printing** check box against the images that they want to appear in documents.

On pressing the OK button, the changes are saved.

3 IMAGE CAPTURE

InfoFlex supports image capture using either the Leutron PicPort, Matrox framegrabbing PCI cards and Epiphan USB Frame Grabber. With any of these framegrabbers and a camera with a suitable output to connect to the framegrabber, images can be captured within InfoFlex image items and saved as bitmaps. The image capture can be controlled via a footswitch if required.

Image capture is also supported through the standard Windows capture mechanism, allowing images from scanners, digital cameras, webcams, etc to be captured.

When using Matrox image capture, the images can be compressed to jpg within the control.

From InfoFlex version 5.70.0100 it is possible to capture images using direct show video capture sources such as web cams (including the Epiphan AV.io HD capture control device). Note that only still images are captured, not video. This will allow image capture from many USB cameras and built in laptop cameras.

To ensure compatibility customers should discuss their hardware requirements in detail with CIMS before purchasing hardware. A preliminary site visit will need to be arranged with CIMS to assess the current technology used by the Trust.

3.1 Configuration for Image Capture Only

Configuration is required in the registry. See section 5.4 *Registry Settings for ImageCapture* on page 17 for more details.

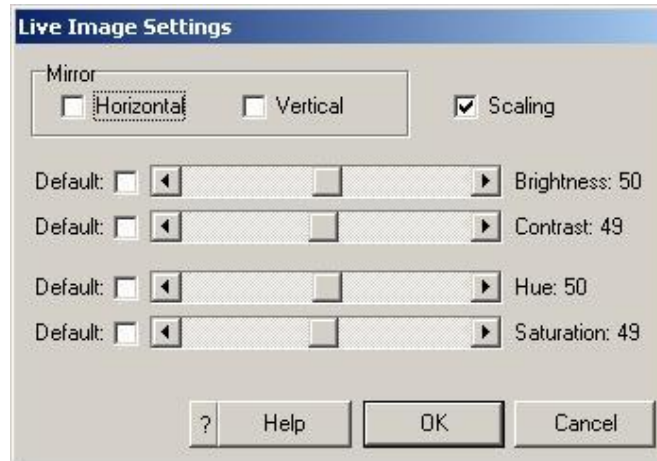
3.2 Configuration for Direct Show

Please contact CIMS Support for assistance with configuration for Direct Show.

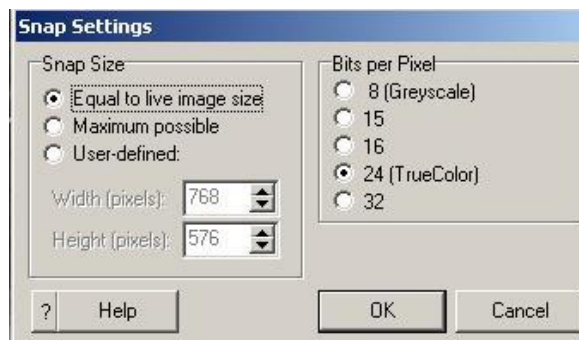
3.3 Camera Adjustments

Use the **Image Settings** menu to adjust the camera for brightness, hue, contrast and saturation levels. These settings can be stored and retrieved for use in another capture session.

The **Live Settings** refer to the Live image i.e. The image being viewed.

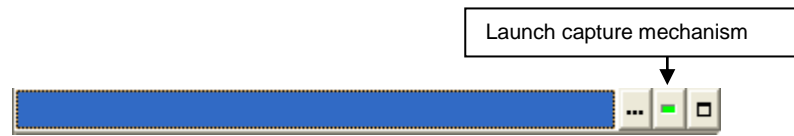


The **Snap Settings** refer to the image that will be saved to disk.

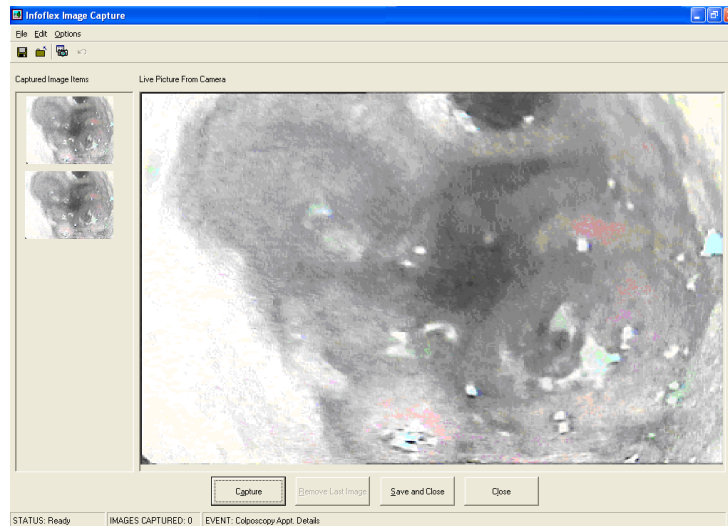


3.4 Capture mechanism functionality

The capture mechanism is launched from the image item control in Data Entry.



The **InfoFlex Image Capture** dialog is displayed



- Capture** Creates a snapshot of the live image at the instant the capture button was clicked. The captured image is shown on the left as a thumbnail. Subsequent images are stored with the latest at the bottom. If the Image capture mechanism does not have a preview window it will display "Live Picture From Camera (Not available)."
- Remove** Removes the last captured image from the list.
- Save and close** Ends the Image Capture session and returns control to Infoflex.
- Close** Ends the Image Capture session and returns control to Infoflex.

If the launch capture mechanism button is not enabled it means that either:

- Image capture is not enabled for this image item
- The pc is not capable of capture or needs configuring.
- It has a default image.

If there is a problem with the control it will display a message box with:

- "Could not load the specified capture control"
- "Frame grabber is invalid"
- "Could not set the device type"

If this does occur then a detailed error/s will be in the errors.txt file if the system has been configured for logging of errors via the IfxConfig utility.

The capture mechanism can also be launched from the IfxImageViewer application via the menu or toolbar.

3.5 Using the Footswitch

The Savant 3-Action Programmable Foot Switch is plugged directly into the keyboard's PS/2 female connector on the pc. The computer's keyboard is then attached directly to the remaining connector.

The footswitch may need to be configured for the following key strokes.

Left Button – Tab

Right button – F4

Center button - Enter

No software is required to operate or program this foot switch.

To change the programming, first unscrew the unit at the base, flip the internal switch, tap the selected pedal to program, and then type on the desired keyboard key. Press the pedal once more. Finally flip the switch back to the "play" position.

For more details about the foot switch please visit www.Kinesis-ergo.com

4 IMAGES IN DOCUMENTS

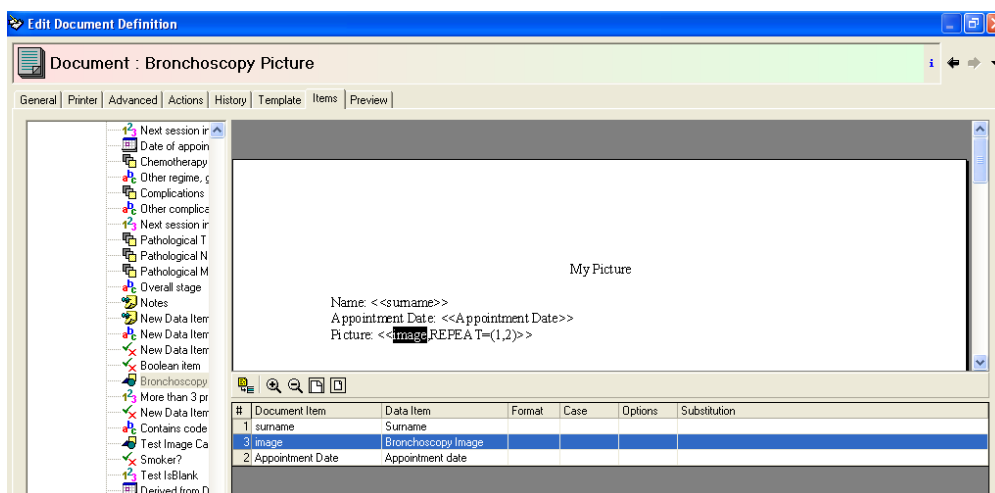
Image items can be displayed within generated InfoFlex documents. Note that only images which have a tick for the property "**Select for Printing**" in the **Order Images** dialog will be included in a document.

4.1 Adding image items to document templates

The image item appears in the template in the same way as other document items. To define image items in a document template the following format is required:

```
<<item name, REPEAT=(from,count), SCALE=scale, WIDTH=width, HEIGHT=height,
MAXWIDTH=maxwidth, MAXHEIGHT=maxheight, FIXED>>
```

All the options can be omitted. The **item name** is a document item which maps to the image item in the **Items** tab of the **Document Definition**, in the same way as other items in the template.



REPEAT

Specifies the repeat settings, if more than one image stored for the item. It can be an absolute range eg **(1,5)** **NONE** or **DEFAULT**. The last 2 are equivalent and lead to only the default image being inserted into the document. The images are repeated on the same line, if possible, before wrapping to a new line.

Only the images that have a tick for the **Select for Printing** option are counted.

SCALE

Specifies the scaling factor (as an integer percentage, so that 100 = full size)

WIDTH, HEIGHT

Specifies an absolute value (in twips = 1/20th of a point or 1/1440th of an inch) for the image width or height.

MAXWIDTH, MAXHEIGHT

Specifies an absolute value (in twips = 1/20th of a point or 1/1440th of an inch) for the maximum image width or height

FIXED

Option to stop the image from being moved or resized once inserted into the document

Examples:

Original size if possible otherwise limited to maximum width:

```
<<image, REPEAT=(1, 5), SCALE=100, MAXWIDTH=3000>>
```

Fixed, as big as possible:

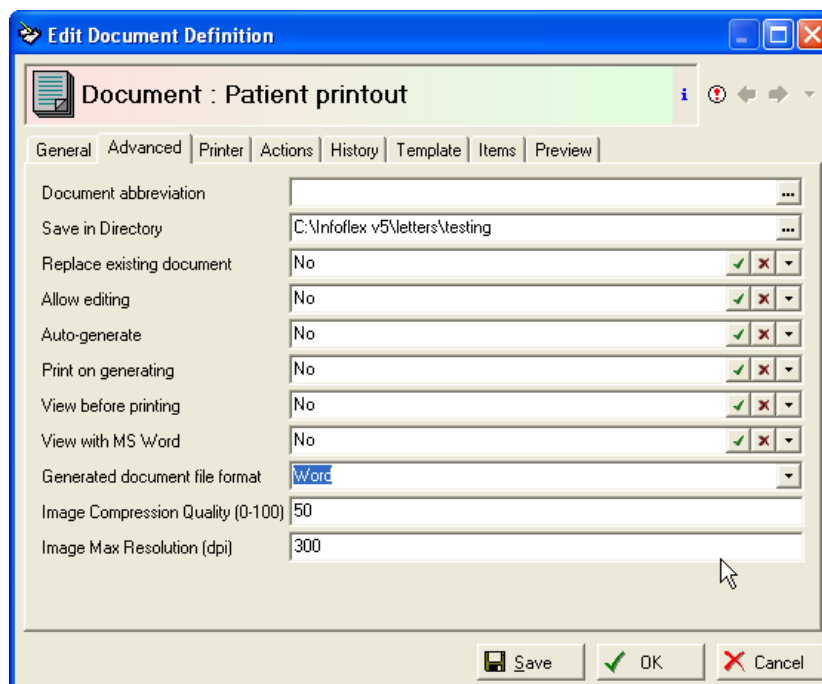
```
<<image, REPEAT=(1, 2), SCALE=500, FIXED>>
```

Absolute Width:

```
<<image, REPEAT=(1, 5), WIDTH=1000>>
```

4.2 Saving Documents with Images

In order to reduce the size of document files that contain images, there is a need to save documents in Word format (rather than RTF format) and allow image properties to be set. New options have been introduced for the document definition to achieve this. These options are for internal InfoFlex documents. They can be found on the **Advanced** tab of the Document Definition dialog.

**Generated document file format**

Can be RTF (default) or Word.

Image Compression Quality (0-100)

Value from 1 to 100 (best quality). If 0 then uses the internal default (50).

Image Max Resolution (dpi)

Dots per inch, default is 300dpi = average printer resolution.

The Image Compression Quality and Image Max Resolution properties are only available when the file format is chosen to be Word.

Note that allowing users to save documents as Word files does not imply that they will get full Word functionality - they are still limited to what the txText control can do natively. For instance, we still cannot have tables within tables, or merged cells within tables.

Also note that templates must still be in RTF format.

5 TECHNICAL NOTES

5.1 Error Logging

In the event of an error there are two error logs that are specific to the imaging function. The first is named "IfxImageControls_Errors.log" and details any run time errors that have been caught by the system.

The second is a record of images that have been captured and is called "IfxImageControls_Debug.log".

These files are located in the same folder as the InfoFlex application.

5.2 Progressive Images

The third party control used to display images in InfoFlex is not able to display progressive images. So an image that is saved as a progressive image will not be displayed properly in InfoFlex. Images that are copied and pasted from the Web can turn out to be in this format.

A workround is to load the image into the Paint application (or other similar application) and re-save it as an ordinary jpeg. This will allow the image to be displayed in InfoFlex.

5.3 Extra Files required for Image Capture

You will need to register IfxCaptureControl.ocx, IfxCaptureLib.dll and IfxWia.ocx as part of Infoflex general setup.

For windows capture you will need to install WiaAut.dll in the windows system32 directory and register with Regsvr32.exe.

If you have a frame grabber card such as the Leutron Pic Port or the Matrox card then these pc's will need IfxLeutron.ocx and IfxMatrox.ocx respectively.

5.4 Registry Settings for ImageCapture

[HKEY_LOCAL_MACHINE\SOFTWARE\CIMS\InfoFlex\ImageCapture]

"WIACaptureDevice"=dword:00000001 0-Unknown, 1- Scanner, 2-Camera, 3-Video
 "FrameGrabberID"=dword:00000001 0-No grabber installed, 1-Leutron, 2-Matrox, 3-Epiphany

The Leutron card needs these registry settings to work

"Leutron_Camera"="PAL_S_CCIR" Type of camera.
 "Leutron_Connector"="S-Video" Type of connector.
 "Leutron_Grabber"="PicPort Color" Type of grabber.

If these settings are not configured, the Leutron PicPort capture card (if installed) will use the values shown above by default.

The Matrox card needs these registry settings to work

"Matrox_Brightness"=dword:00000080
 "Matrox_Contrast"=dword:00000088
 "Matrox_Hue"=dword:00000080
 "Matrox_Saturation"=dword:00000086
 "Matrox_ImageHeight"=dword:00000240
 "Matrox_ImageWidth"=dword:00000300
 "Matrox_ImageDataDepth"=dword:00000008
 "Matrox_CompressionType"=dword:00000000 0-No compression , 1-Compress the image data
 "MatroxKey"= <request from CIMS Support> License key for the lfxMatrox ocx
 "WiaKey"= <request from CIMS Support> License key for the lfxWia ocx
 "LeutronKey"= <request from CIMS Support> License key for the lfxLeutron ocx

The Epiphan Frame Grabber needs these registry settings to work

```
"EpiphanKey"="kikhihghjhdfjdpilfrldlpf"  
"Epiphan_DriverName"="\\\\.\\EpiphanVga2usb"  
"Epiphan_ResizeOptions"=dword:00000001  
"Epiphan_GrabImageHeight"=dword:00000400  
"Epiphan_GrabImageWidth"=dword:00000500  
"Epiphan_CompressionType"=dword:00000001  
"Epiphan_TimerInterval"=dword:00000064  
"Epiphan_RedGain"=dword:000000ff  
"Epiphan_GreenGain"=dword:00000053  
"Epiphan_BlueGain"=dword:00000080  
"Epiphan_RedOffset"=dword:00000008  
"Epiphan_GreenOffset"=dword:00000020  
"Epiphan_BlueOffset"=dword:00000020
```

Direct show

Additional registry settings are required for direct show sources. Please contact CIMS Support for details.

Prevent multiple images being captured by adding a timer delay

There is a registry setting to prevent multiple images being captured when the Capture button is pressed multiple times.

```
HKEY_LOCAL_MACHINE\SOFTWARE\Cims\InfoFlex\ImageCapture\CaptureResetDelay
```

This is set in milliseconds so a value of 1000 equates to 1second.

In Data Entry, the **Capture** button disables after taking a picture and is re-enabled after the time set in the registry.