'Plug-in Digitizer'

v1.2

The 'Plug-in Digitizer' is a plug-in acquisition module for Adobe™ 'Photoshop', 'NIH-Image' or similar applications.   It allows these applications to grab images from Quicktime™ compatible digitizer sources which provide a 'vdig' component.   Images can now be captured at any pixel depth and at a size different to the screen preview size.   It has a 'faceless' operation mode that requires no user interaction, allowing time-lapse image grabbing with suitable applications.

INSTALLATION

NIH-Image:
    Place   the 'Plug-in Digitizer' file in the 'Plug-ins' folder which should be located in the same folder as the 'NIH-Image' application.

Photoshop:
    If there is a 'Plug-ins' folder in the same folder as your 'Photoshop' application then place the 'Plug-in Digitizer' file in the 'Plug-ins' folder.   Otherwise place it in the same folder as your 'PS Prefs' file which is the Photoshop preferences file.   Note, the location of plug-ins for different versions of 'Photoshop' appears to vary, please consult your 'Photoshop' documentation if the above procedures do not work.

Others:
    Follow the instructions given with your application for the installation of acquisition plug-in modules.

USE

Starting:

Launch the application.   Select the 'Plug-in Digitizer' from the 'Acquire' sub-menu. The plug-in's window will then appear.   The default video grabber component will be selected so that a video preview image is displayed in the plug-in's window.   If there is no Quicktime compatible digitizer component available on your computer then an error message will occur.

Window sizes:

The size of the video window can be adjusted by using the set of three radio buttons located on the left side of the plug-in's window under the title 'View'.   These allow selection of full size, half size and quarter size preview video images.   The default is to start up at half size.   Since the plug-in will not let you preview a video image that is bigger than the screen, some size buttons may be dimmed depending on which sizes are too big for the screen.   For the extreme case where the quarter size view is bigger than the screen, an error message will occur and no video preview will be displayed.

The plug-in's window can be dragged by its title bar to any location on the screen. It can now even be moved partially offscreen without affecting the operation of the plug-in.

Note that the size buttons are disabled whenever the video preview is frozen.   To change size restart the video preview with the 'Live' button to re-enable the size buttons.

Digitizer settings:

The video digitizer component settings can be set by clicking the 'Settings' button. This produces the standard video settings dialog that enables you to configure particular features of your video digitizer card, or to change to a different digitizer if one is available on your machine.   The settings and the plug-in's window position are both saved and restored between calls to the plug-in, provided the calling application does not quit in between calls.

Options:

Clicking the 'Options' button will bring-up a dialog box that allows various special operating features to be configured:

'Faceless Operation':

If the 'Faceless operation' checkbox is checked, then when the 'Plug-in Digitizer' is next called from the host application it will use the current settings and automatically return an image without the need for user interaction.   This facility is useful for time-lapse image grabbing.   To cancel 'Faceless operation' hold down the 'option' key on the keyboard when selecting the plug-in from the application's 'Acquire' menu, and uncheck the 'Faceless operation' checkbox in the 'Options' dialog box.

Note that there is a slight delay between calling the plug-in and the return of the captured image.   The length of this delay will vary depending on the model of computer the plug-in is executing on.   The maximum achievable frame rate will therefore depend

on the computer used, but it is likely to be about 1-2 secs per frame.

If an error occurs during a faceless operation an error dialog box will appear and this will require user interaction to cancel it and correct the indicated problem.

Remember to give the host application a sufficient memory allocation to store all the images to be grabbed.

'Greyscale Digitization':

If the 'Greyscale Digitization' checkbox is checked, then the 'Plug-in Digitizer' will set the digitizer into greyscale mode to provide the maximum number of greys available for the digitized image.   Set this checkbox if you are digitizing from a monochrome source.   When it is unchecked the 'Plug-in Digitizer' will set the digitizer to colour mode. The state of this option is preserved between calls to the plug-in.

'Specific grab depth':

This feature allows the plug-in to grab a video image at a pixel depth that is different from the current screen pixel depth as set in the 'Monitors' Control Panel.   When the 'Specific grab depth' checkbox is not checked the captured image will have the same pixel depth as the screen.   When checked, the 'Grab depth' pop-up menu is activated. Choose the required pixel depth for the grab from the pop-up menu as required.   Note that some video digitizer may not support all pixel depths, in which case a garbled image may be returned by the plug-in.   Consult the documentation that came with the digitizer to see which pixel depth settings are valid.

'Use digitizer size':

This feature allows the plug-in to grab a video image at a size that is different from the screen preview size.   When the 'Use digitizer size' checkbox is not checked the captured image will have the same size as the screen preview.   When checked, the size buttons are activated.   Choose the required digitizer size for the grab.

Capturing:

To capture a still from the video preview, first choose the options which you require: digitized image size, digitized image pixel depth, and greyscale or colour.   Then click the 'Freeze' button.   The video preview will then freeze and display the captured image, and the 'Freeze' button will change to a 'Live' button.   If you are not happy with the captured image then click the 'Live' button to restart the video preview, and then capture a frame again with the 'Freeze' button.   Typing a 'tab' character on the keyboard has the same effect as clicking the 'Freeze'/'Live' buttons.

Exiting:

To exit from the 'Plug-in Digitizer' without returning an image to the calling application, click the 'Cancel' button or press the 'esc' key on the keyboard.

To exit from the 'Plug-in Digitizer' and to send an image to the calling application click the 'OK' button or press the 'return' key on the keyboard.   If the video preview is frozen, then the frozen frame is sent to the application.   If the video preview is live at the time of exit, it will freeze and send the image to the calling application in one operation.

About:

  Clicking the 'About…' button will bring-up a window displaying a copy of the instructions from this 'Read Me' file.

NOTES

  In some circumstances the buttons on the left of the plug-in's window will move closer to the left-hand side of the window when particular video preview sizes are chosen. This ensures that as much of the full screen area can be used to display the video preview so that for example, full-frame PAL video can be displayed on a 16" colour monitor.

  When using 'NIH-Image' you must choose a suitable LUT before selecting the plug-in acquisition module. If you are grabbing a greyscale image from a greyscale source then use the 'Greyscale' option. Otherwise if you are grabbing a colour image from a colour source then select the colour 'System' palette. If you try to capture a greyscale source with the colour 'System' palette then the grey levels will be converted to the available greys in the palette giving less than 16 shades of grey.

  When using 'Photoshop' to grab greyscale images you must set your monitor to 'Greys' by using the 'Monitors' Control Panel. When grabbing colour images leave the monitor set to 'Colours'.

  When using 'NIH-Image' a simple macro can be used to start the 'Plug-in Digitizer' with a simple key-press. For example:

```
 macro 'Acquire Video [A]';
    begin
        Acquire('Plug-in Digitizer');
    end;
```

To produce a time-lapse sequence first select the 'Plug-in Digitizer' from the 'Acquire' menu and configure its settings to those required for the images to be grabbed. Check the 'Faceless operation' checkbox in the 'Options' dialog box. Use this simple macro example to grab 10 images with an interval of 5 seconds (plus the delay for the capture of an image) between each:

```
 macro 'Acquire Time-lapse Video [B]';
    var
         number,count : integer;
         delaySecs : real;
    begin
        number := 10;
        delaySecs := 5;
        for count := 1 to number do
            begin
                Acquire('Plug-in Digitizer');
```

```
            wait(delaySecs);
        end;
    end;
```

A more complex macro that saves the sequence of images to disk is given below.   Note that this example requires version 1.55 of NIH-Image, and the example is courtesy of NIH-Image's author Wayne Rasband.

```
macro 'Make AV Movie to Disk';

Captures images using 'Plug-in Digitizer' and saves
them to disk.   Abort at any time by pressing the mouse button.

var
    nFrames,n:integer;
    interval,StartTicks,EndTicks:integer;
    time:real;
    path:string;
begin
    Requiresversion(1.55);
    path := GetString('Folder path:','MyHD:movie');
    nFrames := GetNumber('Number of Frames?',10);
    time := GetNumber('Delay Between Frames (seconds)?',60.0);
    interval := round(time*60);
    StartTicks := TickCount;
    EndTicks := TickCount+interval;
    for n := 1 to nFrames do
    begin
        time := (TickCount-StartTicks)/60;
        ShowMessage(n:3,'     ',time:4:2);
        Acquire('Plug-in Digitizer');
        MoveTo(2,12);
        SetFontSize(12);
        SetForegroundColor(255);
        write(n:3,'     ',time:4:2);
        SaveAs(path,':Frame ',n);
        Dispose;
        while TickCount < EndTicks do
        begin
            if button then exit;
        end;
        EndTicks := EndTicks+interval;
    end;
end;
```

See the 'NIH-Image' manual for more details of programming macros.

RELEASE NOTES

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v1.0 - 28/01/94

- First full release

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v1.0.1 - 08/02/94

- First bug fix release

- Fixed bug in which compression settings were not saved and restored between calls to the plug-in.

- Fixed bug where garbled image was returned in 24-bit addressing mode.

- Fixed bug so that it works with Quicktime 1.5 as well as 1.6.

- Full VideoSpigot PAL can now be displayed on 16" monitors.

- Can capture 16/32-bit per pixel colour images.

- Checks for availability of Quicktime.

- Now displays the version number in the logo.

- Changed name to US spelling "digitizer" instead of UK spelling "digitiser"!

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v1.0.2 - 15/03/94

- Second bug fix release

- When resized the centre of the window remains fixed - previously the top-left corner was fixed.   The top-left corner will be adjusted to always keep it on-screen when resizing.

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v1.1 - 23/03/94

- First minor upgrade

- Added faceless operation mode to allow time-lapse image grabbing (by popular

demand).

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v1.2 - 26/10/94

- Second minor upgrade

- Added support for offscreen grabs so that images can be grabbed at a pixel depth and size other than that of the screen preview.

- Eliminated the need for the preview image to be completely on screen when grabbed.

- Allows greyscale option to be set.

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KNOWN PROBLEMS:

- Settings dialog sometimes does not display live video.

- Does not return correct image when used with VideoSpigot 'vdig' at full size.

- Has not been tested with all the available vdig's.   Extensive testing on AV Macs has taken place, together with limited testing on the VideoSpigot 'vdig'.   If you have problems with the operation of plug-in and a particular 'vdig' please ensure first that you are using the latest version of the 'vdig'.

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FUTURE ENHANCEMENTS:

- Please send your own suggestions for future enhancements to the author.

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Thanks to Nick Safford, Colin Ager and Wayne Rasband (author of 'NIH-Image') for beta-testing and suggestions.

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LICENSE

Commercial users may try out this software for 30 days after which a Shareware fee of $15 per copy will be payable for continued use.   Users wishing to include it with their own commercial products must negotiate a fee with the author.   Please send Shareware fees to the address below - an invoice will be provided on request.

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BUGS

Please report all bugs to Cyrus Daboo:

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