

Be Number One on the Rostrum Digi-Rostrum - the Ken Morse Edition

Mike Hughes recommends following in Ken Morse's footsteps with the latest version of DigiRostrum

Not so long ago I reviewed the first version of Lumidium's DigiRostrum for Focus and was captivated by its functionality and simplicity of use. Since then Lumidium has continued development and recently launched a considerably enhanced and improved version.

Of considerable relevance is the fact that this new version has been developed in close collaboration with Ken Morse (that's him above, not me!) – probably the most experienced rostrum camera operator in the UK and a household name on the credits of innumerable films and television programmes. The product is based on a customised digital rostrum camera system that Lumidium recently installed in Ken's West London studio.

Requirements & Versions

The recommended minimum platform is a PC running Windows XP or 2000 with a 400MHz Pentium 3, 256M of RAM and a 768 x 1024 resolution display. A Mac version is not yet available. The review was carried out on a 3GHz P4 running XP Pro.

Three versions are available – DV, Pro and HD. For most straightforward jobs the DV version would probably be sufficient but it is limited to original resolutions of 4000 x 4000 pixels. The Pro version will handle unlimited resolution originals and offers support for more formats, more rendering options and motion blur. The only difference between the Pro and HD versions is that the latter will output with unlimited resolution. This review is based on the Pro version.

To illustrate this review I scanned a recent cover of Focus to a resolution of approximately 7000 x 5000 pixels. In order to avoid Moire effects with the printing screen I had to apply quite a bit of Gaussian Blur so the original was not quite as sharp as it might otherwise have been.

Overview of the Interface

Like its predecessor the user interface appears unusual but it is deceptively simple and intuitive to use for straightforward jobs. Although there are many enhancements, Lumidium has managed to keep its operation extremely simple for basic pans, rotations and zooms, if one is happy to work in two dimensions and use the default settings.

Since the original version things have been made more intuitive – particularly in the area of control – and coupled with a real time WYSIWYG preview window it remains a pleasure to use. When used with its default settings it is hardly necessary to refer to the very detailed Help files but don't be deceived by its apparent simplicity; there is a considerable amount of versatility and functionality when one digs deeper.

Tools and Panels

For those who did not see the previous review, the user interface comprises a drop down menu bar (with usual functions such as Save, Load, Edit, Preferences, Help, etc.) and about a dozen tools (most of which are short cuts to menu options). There is a large work area panel that displays the image being worked on and a re-sizeable preview panel. The latter displays the appearance, framing and orientation of the final output and plays in real time for any part of the panning path.

A third 'Graph' panel provides an interactive graphical display of positional, dimensional and rotational key frames together with their parameters on an unusual set of timelines. Whilst the work area and preview panels appear almost identical to those in the original version, the graph panel has been completely re-vamped and is a major improvement.



The work area panel displays the original image and opens with preset start and end key frames in arbitrary positions linked by a linear movement path with a default sequence length of 5 seconds.

Positions, dimensions and rotations of these key frames can be adjusted by dragging on control points and the results are immediately displayed in the preview panel. Extra key frames can be added at will between the start and end frames simply by clicking on the movement path and the overall running time of the sequence can be changed by entering a new value in the tool bar.

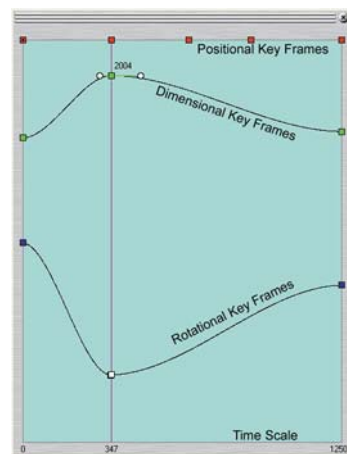
Each key frame has handles that can be dragged to adjust the curvature of motion between them – just like adjusting Bezier curves. The positions of interpolated frames (tweenies) are shown as dots on the movement path and their distribution is handled automatically – depending on the relative positions of key frames within the overall sequence length and any acceleration parameters that may have been optionally adjusted. For straightforward jobs everything can be done within this panel prior to outputting the sequence.

Graph Panel

The biggest change to the user interface is the appearance, content and functionality of the Graph panel that graphically mimics the settings displayed in the work area except that it shows all key frame positions within the time domain – as opposed to the work area that shows them in physical positions.

It offers a very refined way of controlling the time positioning of key frames together with their dimensional and rotational parameters. These parameters can be adjusted simply by dragging on control markers.

In its simplest form (i.e. 2D mode) the panel contains three 'timelines' of the sequence. One indicates the position of key frames relative to the overall running time; another graphically shows the dimensions together with the acceleration/deceleration between them. The third timeline indicates the degree of rotation given to each key frame together with the degree of rotational acceleration.



Dragging the markers horizontally adjusts relative timing positions within the pre-determined sequence length. Dragging vertically on the dimension timeline adjusts the size of the frame (i.e. the degree of zoom); similarly vertical dragging on the rotation timeline adjusts the frame's angle.

Each control marker has a 'handle' that is used to adjust acceleration between it and the next. This is indicated by the shape of the timeline that takes on the appearance of a Bezier curve.

This may sound complicated, however it is extremely simple to use in practice and the results of any adjustments are instantly displayed in the preview panel.

At any time the horizontal cursor keys can be used to step through the complete sequence frame by frame (or as a continuous run) with the result displayed real time in the preview panel.

The Original Images

DigiRostrum 'Ken Morse Edition' handles a wide variety of still image formats – including BMP, JPG, PNG, PCX, TGA and TIF. For best results the pixel resolution of the original image should be greater than the resolution of the output video – ideally at least four times. This allows 'zoom-ins' without necessarily degrading the quality of the end result.

Having said this DigiRostrum makes a good effort even when it has to scale resolution up in order to produce its output. There is, however, a limit to this that is in the eyes of the beholder! A useful traffic light display in the toolbar gives advance warning if the degree of zoom-in is likely to degrade output quality.

An additional feature of the current version is its ability to import original images direct from any standard TWAIN scanner that is already installed on the system. The original image is displayed in the main panel against a default black background. The background's colour and transparency can be set as required – for example to use as a key if the resulting sequence is to be superimposed as a picture in picture after transfer to an editing package.

The 'virtual camera' can be 'pulled back' from the image to create a background as large as is required and the default start and end key frames have dimensions preset to match the resolution and aspect ratio of the desired output video.

Short Cuts and Numeric Entries

Lumidium has introduced many new keyboard short cuts into the new version to speed up operational use. Just about every menu and tool bar option now has an associated key. These are particularly useful for handling some of the new features.

For example it is now possible to set the X or Y coordinates of a key frame by pressing a key and

entering a value. It's a pity that this has to be done separately for the X and the Y – it would be a bit more convenient if both coordinates could be set in one operation but this is only a minor gripe.

Similarly, depression of single keys allows figures to be manually entered for many parameters including the 'camera's' Z position or focal length and the angle of rotation of a frame.

The options are far too numerous to list within this review but the ability to enter numeric values for such parameters enhances precision. The detailed Help section includes a printable list of all these short cuts with a description of their functions.

Initially, I was unable to find a way of manually entering frame dimensions (in order to exactly match the sizes of two separate key frames). Lumidium later advised me that this is done by using the camera's Z position.

Introducing Pauses

A very important new feature is the ability to introduce a pause of any duration within the movement path of a sequence. This is done by duplicating a key frame at a fixed position by selecting a frame and pressing 'K'.

This creates a new and identical key frame at the same location as the first but introduces a default 12-frame pause between them. Unless you look very carefully there is no obvious change to the work area display but in the graph panel the pair of key frames are shown separated by 12 frames and are identified with a '+' and an 'x'. The default pause time can be set to any desired value by selecting the second key frame of the pair, pressing 'T' and entering a new value.

Like many things in the Ken Morse Edition there is more to this than initially meets the eye. If a new pause value is entered manually by pressing 'T' the extra number of frames is added to the overall sequence time, however, if the second frame of the pair is dragged in the graph panel the pause length can be adjusted without altering the overall running time of the sequence.

When using the latter approach any increase in the pause duration increases the speed of motion into

and out of the pause. This is just one example of some of the hidden options within the package that should be explored.

Getting More Ambitious

Whilst the basic use of DigiRostrum is very straightforward life can get very interesting and quite complicated when using some of its less obvious but very clever features. So complicated in fact that it is difficult to describe them in words. By far the best way of experiencing them is to download a free trial copy and 'have a play'.

A hands-on approach whilst viewing the results in the realtime preview is a much better way to discover its features and to get used to those that are time domain based. I would hate to have to write a manual on how to use the more complex features that the system offers!

Most of the more interesting operations are set up and controlled within the graph panel. For example it is possible to select a key frame and move its associated dimensional or rotational key frames (together with their acceleration parameters) up or down the timeline relative to the position of the key frame itself. When the positional key frame is shifted in the time domain the dimensions and rotation move with it but keep their relative time separations.

Shifting the time positions of the key frames in the graph panel does not alter the physical positions of the frames relative to the image in the work area but has a significant effect on rates of panning and accelerations. By default the system automatically compensates by distributing interpolated frames throughout the sequence to ensure movements are kept as smooth as possible with appropriate accelerations. This automatic feature can be switched off to allow the user to create more dramatic effects.

Fly into Three Dimensions

When working in the default 2D mode the user is simply controlling the movement, rotation and size of a two dimensional viewing window over the original image. The virtual

camera is looking at the viewing window from a fixed perpendicular position relative to the plane of the viewing window and moves with the window. This is all that is necessary for normal panning effects.

DigiRostrum is, however, able to give control to the position and orientation of the virtual camera as well as the key frames. This is accomplished by switching to '3D' mode in the toolbar.




When 3D mode is selected an extra circular marker – representing the camera – appears in the work area. For every key frame on the movement path (or even pairs of frames when the pause option is used) it is possible to set the physical position, focal length and tilt of the virtual camera. The camera then follows a smooth path of its own between these settings relative to the preset key frames.

In practice this means that the camera could tilt to give an oblique view of the original image whilst it swings around or, possibly, 'flies' over the top of it. It is very difficult to describe this sort of effect that can best be imagined by having a large image placed on the floor whilst pointing a handheld camera at it and then moving and tilting the camera in any of three dimensions as it pans over and around the surface of the image.

Careful use of this feature can produce stunning perspective results when used with large original images.

Previewing and Making Corrections

At any time during the construction of a sequence the potential end result can be checked in the preview panel – either by stepping through it using the cursor keys or by using the play controls in the preview panel. 

It is possible to re-work any of the settings – adding or deleting key frames, tweaking parameters and even adjusting the overall running time of the sequence.

If the running time is altered DigiRostrum will automatically re-distribute the resulting interpolated frames to maintain the relative time positions of the key frames within the new timescale.

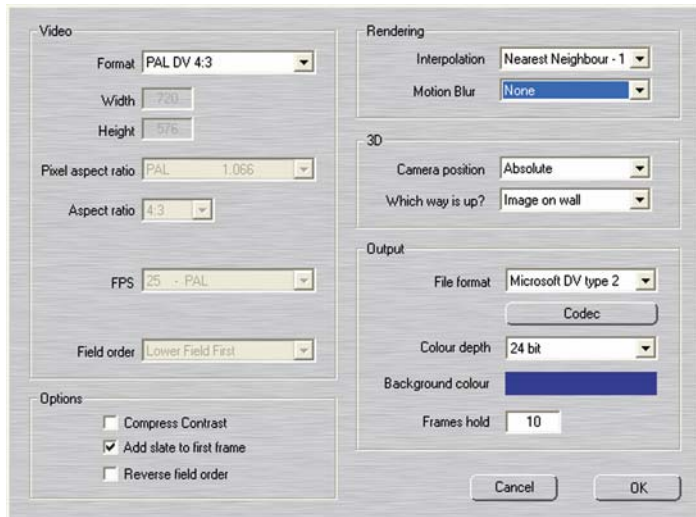
Outputting the Result

Once set up and tested the entire sequence can be output in several ways.

A new feature in the current version is the ability to play out directly to a FireWire connected DV recorder. Alternatively files can be created in a variety of formats – including Type 1 and Type 2 DV, uncompressed AVI or to AVIs using some of the standard CODECs installed by Windows. Providing Quicktime is installed it is also possible to output MOVs. There is also an option to output as a sequence of numbered images in a variety of standard still formats (useful for creating animGIFs).

The system has a very detailed section in which the output parameters can be set up – these include NTSC as well as PAL configurations (with the pixel ratios properly accounted for).

For convenience DigiRostrum has a number of standard configurations that cope with most everyday standards and formats –



for example 4x3 or 16x9 with either DV or normal resolutions – but there is plenty of scope for the customised settings of resolutions, frame rates, field order and even aspect ratio.

There is an option to incorporate a single frame 'Ident Slate' at the beginning of each sequence and to put a hold on the first and last frames for a selected period of time.

One can select from one of four types of frame interpolation methods (from 'Nearest Neighbour' to 'Super Sampling') but the higher quality settings can have an impact on rendering times. I found that the lowest quality setting was

perfectly adequate for most applications.

As well as setting the output video's basic parameters it is finally necessary to select the desired CODEC. This is an area in which there seem to be one or two anomalies. I found that some of the Window's native CODECs did not work properly. If you require to output using a DV CODEC it is vitally important to select the standard settings for PAL DV (not just PAL) before deciding whether to use a Type 1 or Type 2 CODEC.

Depending on the editing platform ultimately used to incorporate the sequence it may be necessary to check which type of DV can be supported. For example, I found that Liquid Edition was perfectly happy with Type 1 whereas Premiere insisted on Type 2 in order to perform properly.

This is not a criticism of DigiRostrum and is just one of those things when too many standards are around the place. An ultimate fail safe is to use the 'Uncompressed' option (but only if there is plenty of disc space!).

Conclusions

The new Ken Morse Edition of DigiRostrum has lost none of the user friendliness of its predecessor, however, it has many enhancements that turn it into an extremely powerful tool if the user wants to optionally invoke its full power.

There are extensive Help files and these need to be read very carefully to get the most out of some of the more sophisticated features – in particular when working in 3D mode. It's worth printing them out.

I was unable to find any major flaws in the way it functioned. The biggest problem was the inability to work with one or two standard Windows CODECs, but this would probably not be a problem for the serious video maker and there is a good chance that Lumidium will be addressing this matter.

I would have liked to have been able to manually enter X and Y positional coordinates in one

operation rather than having to go through two steps.

The new 'Graph' panel is an ingenious innovation and, together with real time pre-viewing, makes it extremely easy to experiment with different complex settings – even for the beginner. The ability to incorporate pauses into a sequence is a big bonus and saves having to build a sequence out of separate clips – which was the only way of creating pauses in the original version.

Rendering times are quite reasonable but depend very much on the nature of the work being handled and the quality setting used for output. A fairly typical sequence took about 6 times real time to create a DV file on my system.

The quality and smoothness of the rendered output left nothing to be desired. Overall, DigiRostrum has enhanced its reputation in my eyes. It may not look as flashy as the likes of Imagine, but it does the job it is supposed to do without frills – and does it well. Clearly it has been designed by people experienced in production requirements – not at all surprising when the Ken Morse connection is taken into account!

For more information go to Lumidium's website at www.lumidium.com. As well as finding out more about the product's history there is a full specification spelling out the differences between the three versions and a useful section of FAQs.

If you have a broadband connection (or for the cost of a telephone call) there is nothing to lose by downloading the 9MB zip file of the 30-day trial version and check it out for yourself. ■

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Summary of Enhancements

For those who already use the original DigiRostrum, the major enhancements found in the new version are:

- Creation of DV media
- DV print-to-tape
- Ability to incorporate pauses
- Direct input from a TWAIN scanner
- Support for any sized source image (Pro-version only)
- Quick Time support (Pro-version only)
- Timelines with draggable key frames
- Motion blur (Pro-version only)
- Many extra keyboard shortcuts