

Phoenix



RESTORATION | REMASTERING | ARCHIVING

A semi-transparent overlay of a video editing software interface, likely DaVinci Resolve, showing various tools and settings for restoration and remastering.

Timecode: 01:00:17:20 - 01:00:24:06 - 00:00:06:11 - 01:00:21:04

Duration: 01:00:17:20

Effect tab is selected.

Process settings:

- Enable: Process
- Amount: 75
- Aggressiveness: 50
- Preservation: 75
- Base Level: Auto

Speed vs Quality: Balanced

Data: Linear

Intensity per channel graph showing three curves (blue, green, red) across low, mid, and high intensity levels.

DigitalVision
www.digitalvision.tv

Overview

The Phoenix suite of products offers world class restoration tools for the most demanding jobs. Featuring our multiple award winning DVO technology.

Phoenix is designed to produce great results fast with less manual intervention. With a familiar timeline based interface, the artist and archivist can easily review and touch things up in context if required.

Each product in the range has been designed around a feature set for specific jobs and budgets

Phoenix Finish

Finish is the top of the range and the restoration product to beat. It brings all the power of both Phoenix Refine and Phoenix Video in a unique combination, allowing users to fully correct and deliver projects of mixed film and video media with related artefacts, within a single timeline, also extending it with :

- A complete set of powerful colour tools
- Powerful finishing tools, including DVO Upscale for optimised upscaling to larger formats and DVO Twister for sophisticated motion-compensated frame rate conversion.
- Event View of your timeline.
- Optional camera RAW support.
- Compatibility with the Avid Artist panel.

Phoenix Refine

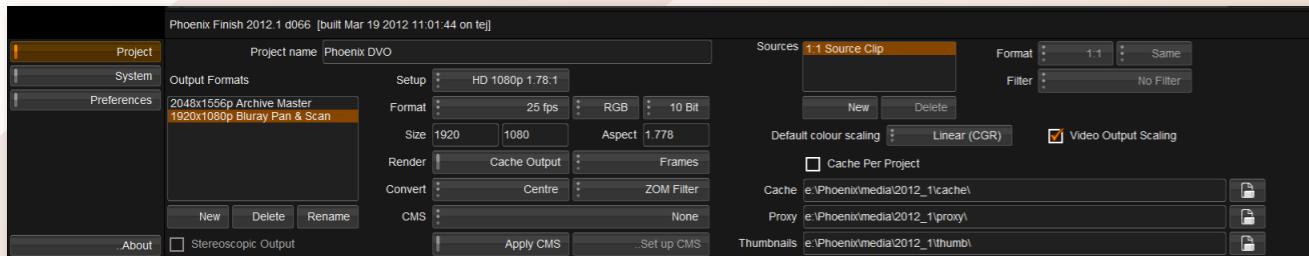
The best high-end restoration tool-set for repairing damage to film material. Combining the best in automatic, semi-automatic and manual restoration tools, Refine adds editorial and effects processing capability. The result is a single system that delivers for both mastering or archival and preservation.

Phoenix Video

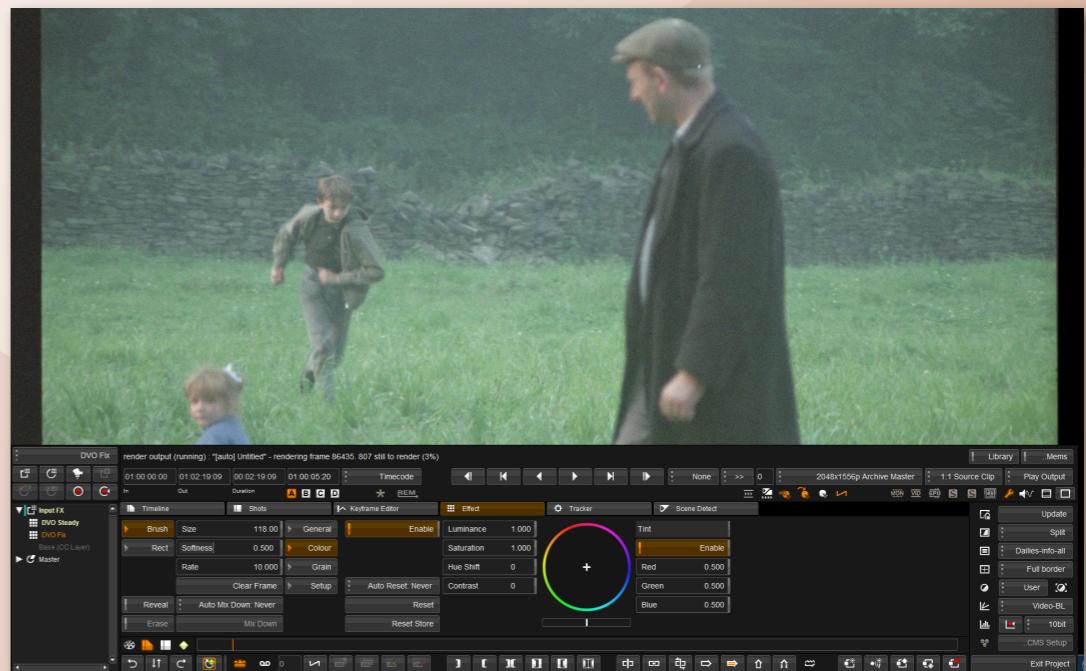
End-to-end solution that includes Digital Vision's leading image manipulation DVO software tool set for highly automated restoration and enhancement of video content stored on various tape formats, such as 1", U-Matic and Betacam SP or later transferred to digital tape formats. The system handles common image defects such as drop-outs, severe noise, cross colour artifacting, line sync problems and more. Additional features include motion compensated frame rate conversion and high-quality upscaling as well as full support for common broadcast codecs.

Phoenix Touch

Cost effective image restoration software aimed at film based material and for cleaning up VFX plates and DI scans. Phoenix Touch contains powerful automatic dust busting capability alongside a high quality manual repair tool-set that can quickly turn around intensive repair tasks. 8mm, 16mm, 35mm or 70mm* film can be scanned into SD, HD, 2K, 4K or custom size. Can also act as assist station to Phoenix Refine and Phoenix Finish.



Phoenix - Project setup



'Kes' - Courtesy of The Criterion Collection

Features

Full 64 bit native applications

Make use of all available system memory and cope with the biggest images, including 4K film.

Multi-layer timeline

Lay out and process your material in a natural and flexible way, with multiple video and audio tracks. Timeline and shot bookmarks allow for better organisation and retrieval of information. Easily add different versions of shots to the same timeline.

Import and Conform

Support for a massive number of image sequences as well as standard list formats like EDL and CUT Lists. Automatically extract metadata and conform sequences.

Library

A powerful library for managing all imported and referenced material with sorting, searching and sophisticated metadata handling. Automatic library folder creation and item naming options on file import based on user configurable metadata extraction.

Interoperability

World class interoperability with third-party systems supporting industry standard formats like Avid DNxHD, AAF, MXF and Apple ProRes. Read and write Avid DNxHD formats, MXF and Quicktime formats.

Layer based tools

Every tool can have extremely powerful isolation and routing functionality. Isolation can be matte based, user-defined shape based or undertaken via sophisticated keyer functionality. Layers can be selectively cached to streamline operations and greatly enhance user interactivity.

Full support for multiple monitors

Multi monitor support with different resolution configurations makes working on complex timelines a breeze.

Effect save and recall

Save and recall effects using notes, from single effects to complicated multi-layered effects. Create a library of notes and apply to any segment on any timeline in any project.

Intelligent rendering engine

Unobtrusive background rendering ensures you always have the best results available without interruption.

GPU acceleration

A realtime Master layer accelerates rendering on Pan & Scan and Colour Correction work. Multiple formats can be used and delivered from the same timeline. Globally apply final crops or resizes.

VTR I/O

Ingest and output PAL, NTSC and HD formats 2K monitoring

Lee Kline, Technical Director at The Criterion Collection, says:

'Kes' was a particularly challenging project with really tough vertical scratches in the original camera negative. We didn't have any other tools tackle this as well as Phoenix, so we were excited to see the results. It was almost magical.

Work descriptions and scenarios

Below is a number of restoration scenarios and how the Phoenix tools can be utilized. These are not recipes, merely examples on approaching the issues faced with.

General film issues

The normal approach for film restoration is to address global issues (i.e. issues affecting the whole image such as unsteadiness or flicker), the local ones and finally and sometimes optionally enhancing the image.

Unsteadiness is first removed using the automated DVO Steady, in combination with addressing splice bumps, then flicker (including chroma breathing) is reduced with DVO Flicker, also automated. Once the global issues have been addressed, tram lines can be removed using DVO Scratch. The normally time consuming dust-busting process is done swiftly with the motion compensated DVO Dust optionally complemented with manual, but motion compensated

DVO Fix touch up, either using include or exclude modes. Although most of the listed processes are automated, the operator can override and fine tune for an even better result. Finally a bit of gentle grain reduction using DVO Clarity and some sharpening using DVO Sharpen can be added for that extra crispness. Both Phoenix Refine and Phoenix Finish are suitable for this type of work.

Old and damaged film

In addition to the above general film cleaning, old and severely damaged film needs additional treatment. The complete range of tools may need to be used and Phoenix Finish is the best choice here. E.g. frame reconstruction can be done in a number of ways, with motion compensated fill in using DVO Fix, time stretching with DVO Twister, using multiple layers/tracks and compositing tools.

The negative, parts of a print or even material previously put on tape may be used and matched to the negative by image enhancement such as sharpening (DVO Sharpen) and grain reduction (DVO Clarity or DVO Grain) as well as image resize/positioning (Pan & Scan or DVO Upscale).

The latter will make SD material look sharp when upscaled by preserving edges (especially diagonals). Also colour/density matching using the advanced grading tools of Phoenix Finish can be performed.

Digital Camera issues

Digital noise is the most common issue, but other sensor issues, if present, providing different types of patterns needs to be addressed first.

This can usually be resolved by sharp cut-off low pass filtering using the generic DVO Brickwall or DVO Alias tools. Digital dropouts can be removed using DVO Dust, a very versatile tool that can remove almost any type of random artefacts, whether they are field or frame based.

Digital noise is finally reduced by DVO Clarity. It is not unusual that different camera types are used in the same production, whereby different types of noise are induced. DVO Clarity will easily match these different shots.

Analogue Video tape

Start by addressing with line start issues DVO Line Sync and possible composite artefacts with DVO Cross Colour. One of the biggest issues with material on analogue tapes are dropouts.

Use DVO Dropout to take care of this. Bigger artefacts can also be removed manually with DVO Fix using motion compensated fill-in.

Noise is typically also a big problem, but can dramatically be reduced with DVO Noise, which also has separate luma/chroma controls, typically to attack the chroma channel much harder. To make the final product look pristine, sharpening (DVO Aperture) can be added.

Having mixed film/video related artefacts? No problem, film and video restoration tools can be mixed to restore the content, matching the original capture.

Matthew O'Hara, lead DVD author for FUNimation says:

'Dragon Ball Z' originates on 16mm film, and over time had begun to show signs of aging – dust, scratches, some shaking and focus. In this restoration process in HD, the Phoenix has greatly enhanced our ability to recover the quality of the original material in a realistic time frame without the artifacts some algorithms leave behind.

Grain can be challenging. DVO Clarity enables us to clean and restore, without removing what we consider the right amount of grain to give the images depth.

Phoenix product options and overview

Software	Phoenix Touch	Phoenix Video	Phoenix Refine	Phoenix Finish
Multi Track Timeline	●	●	●	●
Conform	-	●	●	●
Background Scene Detection	●	●	●	●
EDL handling	-	●	●	●
Video I/O SD/HD 444	-	● ¹	● ¹	● ¹
2K / 4K	●	-	●	●
SD / HD	●	●	●	●
RAW Camera Support	-	-	-	○
Advanced Codec Support	○	●	○	●
DVO Dust + Fix	●	N/A	●	●
DVO Video Tools	-	●	-	●
DVO Restore	-	-	●	●
DVO Enhance Tools	-	-	●	●
DVO Convert Tools	-	●	-	●
Colour Correction Tools	-	● ³	● ²	●
Input FX Layer	●	●	●	●
Base Layer	-	-	-	-
FX Layer	-	●	●	●
Master Layer	-	-	-	●
Pan & Scan	-	●	●	●
Notes & Composition Notes	●	●	●	●
Event View	-	-	-	●
Avid Artist panel support	-	-	-	●
Stereoscopic	-	-	-	○
ACES Colourspace	○	○	○	●

Key: ● Included as standard in product ○ Optional extra - Not Available

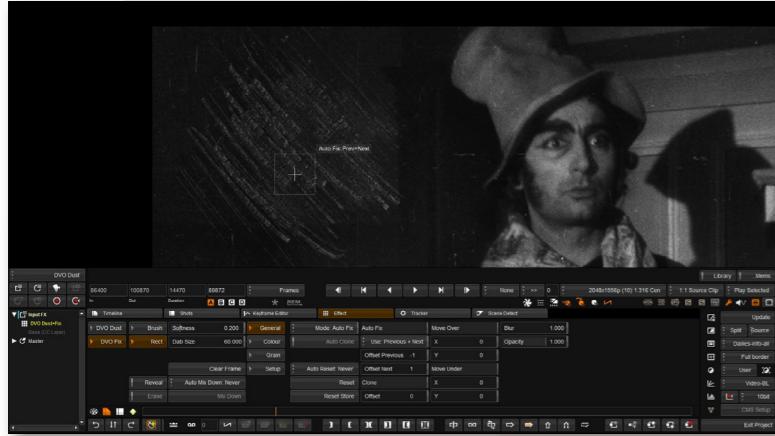
1 Via optional Atomix I/O board

2 Colour Management Tool Only

3 CMS, Lift Gamma Gain, Saturation, Channel Mixer

Industry standard DVO image processing toolset

The recent addition of the new integrated video restoration toolset enables our customers to expand their services and bring new life to valuable content stored on tape. Phoenix is now the only high-end restoration and mastering solution that provides both film and video restoration tools.



DVO Dust+Fix interface - Image courtesy of Éclair

Mars Motel's Mats Forsberg explains:

We used Phoenix Finish to clean up dirt and dust and to remove scratches from Bergman's classic Autumn Sonata, which stars Ingrid Bergman.

Considering the film is more than 30 years old it wasn't too badly damaged. Phoenix Finish's Scratch and Clone painting tools allowed me to easily fix a number of scenes with vertical scratches that would have otherwise have been more difficult to remove.

I used DVO Dust, Fix and Steady for the majority of the project to achieve a pristine finish. Phoenix Finish brought speed and flexibility to the project and because many of the processes are automatic I didn't need to spend time setting up parameters. The client was delighted with the result. The film looks like new.

The following DVO packages make up the complete suite:

DVO Restore

- DVO Dust
- DVO Scratch
- DVO Fix
- DVO Dust + Fix
- DVO Print Align
- DVO Steady
- DVO Steady II
- DVO Warp
- DVO Flicker
- DVO Chroma

DVO Enhance

- DVO Clarity
- DVO Grain
- DVO Regrain
- DVO Alias
- DVO Sharpen
- DVO Brickwall
- DVO Aperture

DVO Video

- DVO Line Sync
- DVO Cross Colour
- DVO Dropout
- DVO Fix
- DVO Dropout + Fix
- DVO Noise
- DVO Aperture
- DVO Chroma

DVO Convert

- DVO Twister
- DVO De-Interlace
- DVO Upscale

The DVO Tools

DVO Restore is an extensive tool set used to repair and renovate media ready for repurposing. Highly automated, these tools still provides the operator with fine grain control when required..

DVO Dust

Fully automatic and highly accurate film dirt, dust and random scratch concealment and video drop-out removal system. It can remove around 90% of visible imperfections without introducing unwelcome artifacts. Experienced operators are provided with full access to advanced processing filters and settings.

Dust now also includes a mode for removal of line dropouts from interlaced video sources.



Film damage at a splice point
Image courtesy of The Edit Store



After repair using DVO Fix
Image courtesy of The Edit Store

DVO Scratch

Processes vertical/continuous scratches. These are typically those not being detected by dust/dirt removers, which are looking for random defects in the picture. The process is fully automatic and has an advanced detection algorithm with a fill-in result far superior to the normal process of hiding the defect using information from both sides of the scratch.

DVO Fix

Facilitates the repair of specific areas and imperfections in a single frame, such as scratches, hairs and blotches or even larger damages such as punch holes, film tears and full frame reconstruction. Using a brush or shape tool to select the damage, DVO Fix automatically repairs the selected area using motion compensated fill-in to recreate missing detail plus grain compensation to blend-in the recreated information. In addition to Auto Fix and manual Clone, there's also an Auto Clone mode where automatic repositioning and best match of surrounding frames is done as an alternative to complete regeneration of content. Visual aids (overlay) provides helpful information on operating mode plus numerous keyboard shortcuts allows the operator to concentrate on fixes rather than navigating the GUI.

DVO Dust+Fix

A clever combination of above DVO Dust and DVO Fix that allows manipulation of the DVO Dust automatic dust busting using the brush and shapes in DVO Fix.

DVO Print Align

A fully automatic process to align RGB separation prints, even if the offset varies over time.

DVO Steady

Used to reduce unsteadiness due to film weave during scanning or camera shakes during capture of footage. A two pass solution, including advanced motion estimation, provides better separation of random instability and pan/tilt movements. DVO Steady can be used for both film and video material.

DVO Flicker

Analyses the image sequence to remove brightness and chrominance (a.k.a. chroma breathing) fluctuations. These may be caused by varying exposure time, unsynchronised light sources, telecine transfer, aging film stock and/or film chemical related issues.

DVO Steady II

Steady II builds on the original Steady algorithm and can be used to fix splice bumps automatically. There are also new scaling options and it a one pass automated tool.

DVO Chroma

Used to counter the effects of chromatic aberration in film material.

DVO Warp

It is well known that line scan technology is affected by film splices, resulting in possible image warping after the splice. DVO Warp is a fully automated tool for detecting and repairing possible warping with very high precision and no user intervention.

**Tom Burton,
Director of Technicolor
Restoration Services says:**

We rely quite heavily on Phoenix for a great many reasons. The fact that it is based on an editorial platform is a benefit for us, based on our workflow. We specialize in extreme reconstruction and repair and use somewhat atypical approaches for much of our work.

DVO Enhance consists of creative tools that significantly improve detail, adding that extra touch and clarity.

DVO Clarity

Automated and texture preserving grain and noise management. DVO Clarity is designed to work in any resolution, from SD to 4K and above.

With completely new algorithms including grain/noise characteristics analysis for automated grain and noise reduction, new motion estimation engine and a new innovative spatio-temporal filter, the DVO Clarity provides stunning images, virtually artefact free, still retaining the original image sharpness and texture. Having become a much used tool and approved by major players in broadcast, restoration and post production, DVO Clarity is now considered as the new industry standard in grain and noise management.



This image shows the DVO Warp repaired image on the left compared to the original on the right. The frame is significantly compressed horizontally. (zoomed in)

This is the repaired frame (zoomed in)

DVO Grain

The algorithm is specifically designed to manage the look of film grain and to reduce unwanted electronic noise in film or video originated material. Uses include restoration, compression pre-processing, and image processing of new feature film, television and commercial material. The updated version of DVO Grain includes a video mode with separate Y/C control for improved handling of video tape noise.

DVO Re-grain

Allows the user to quickly set up and generate natural looking film grain. The intuitive controls enable you to match almost any type of film stock by setting the grain size and sharpness as well as matching the characteristics of highlight and lowlight intensity behaviour.

DVO Alias

Takes care of the negative side effects of out-of-band vertical frequencies that show up on-screen as line flicker or "twitter" as well as moire.

DVO Sharpen

An advanced sharpening tool that greatly enhances out-of-focus shots. It uses adaptive picture analysis and processing to yield excellent results without the common side effects associated with standard algorithms (such as amplified grain, noise, or halos around areas that were already sharp).

DVO Brickwall

Helps reduce signal entropy making compression easier. It provides an extremely sharp cut-off beyond a user defined frequency, enabling the creation of an accurately defined spectral content of material for various types of compression pre-processing. This means that compression artefacts can be reduced and the quality of the compressed image can usually be greatly improved. DVO Brickwall is a universal tool that can also cure problems such as high frequency patterns.

DVO Aperture

A high quality frame-based spatial filter that increases the apparent sharpness of the picture. This is a critical function when dealing with film scans and compensates for the loss of high frequency information generated in the film scanner.

DVO Convert tools are used to create content in any format for any delivery platform, whilst retaining the original quality.

DVO Twister

Standards conversion relies on the process of interpolating picture content, creating images that did not exist in the original material, either because you need extra or less pictures. DVO Twister provides motion compensated standards conversion from any format, frame rate and resolution to any other, even creating 24P out of interlaced material

DVO De-interlace

Creating film look from interlaced video using high quality de-interlacing with advanced motion algorithms. The de-interlacer can maintain the fluid motion present in video (e.g. 50p delivery from a 50i source) or create a film look (e.g. 25p delivery from a 50i source).

DVO Upscale

Optimised upscaling of material, of specific value when converting from SD to HD. The algorithm maintains the high quality of edges (particularly diagonals) using clever adaptation and filtering technique, providing optimum result for both natural images as well as graphics and text. better separation of random instability and pan/tilt movements. DVO Steady can be used for both film and video material.

DVO Video is a highly automated tool set that brings new life to valuable content stored on video tapes.

DVO Line Sync

Line sync or line jitter is a very common problem with archived analogue video tape. It is typically caused by the lack of or disturbances of line synchronization pulses, preventing the the video tape recorder from locating the actual start and end of each line. The most visible effect is that edges, which should be vertical in the image, appear to be jagged. DVO Line Sync automatically detects and corrects these line displacements as well as any stretching thereof.

DVO Chroma

Used to counter the effects of chromatic aberration in film material.

DVO Cross Colour

Significantly reduces Cross Colour a.k.a Chroma Crawling, an infamous defect that results from crosstalk due to the intermodulation of the chrominance and luminance components of a composite signal like PAL or NTSC. Once a video signal has been in the composite domain this effect is not easily removed

DVO Dropout

A fully automatic and highly accurate video drop-out removal system. It can remove around 90% of visible imperfections without introducing unwelcome artifacts utilizing a pioneering set of processing algorithms and filters.



Repair using DVO Line Sync
Image courtesy of Studio Hamburg

DVO Fix

Manual repair of specific areas and imperfections in a single field, such as larger dropouts. Using a brush or shape tool to select the errors, DVO Fix automatically repairs the selected area using motion compensated fill-in to recreate missing detail. In addition to Auto Fix and manual Clone, there's also an Auto Clone mode where automatic repositioning and best match of surrounding fields is done as an alternative to complete regeneration of content.

DVO Dropout+Fix

A clever combination of above DVO Dropout and DVO Fix that allows manipulation of the automated processing using the brush and shapes in DVO Fix.

DVO Noise

Digital Vision's DVO Noise algorithm is specifically designed to reduce unwanted electronic noise especially on video originated material. Uses include restoration, compression pre-processing, and image processing of new feature film, television and commercial material.

DVO Aperture

A high quality frame-based spatial filter that increases the apparent sharpness of the picture. Compensates for the loss of high frequency information.

Technical specifications/Features

Timeline

- Trim, add and remove edit, ripple
- Multiple tracks for easy versioning and comparisons
- Fast and accurate background scene detection
- Apply and work with dissolves transparently during the restoration process.
- Audio support (sync check against picture) import of WAV and MXF audio.
- Easy sanity check against original material in virtually any format.
- Timeline thumbnails
- Specialist clip scrubbing functionality
- Specialist restoration clip and frame review options
- Adjustment segments allow for any tools to be applied locally or globally
- Automated cache generation and ability to specify multiple cache nodes on a per layer basis.
- Manual and automatic tracking (Shape and Deformation)
- Manual and automatic keyframing
- Sophisticated conform ability
- Coloured, annotated markers on clip and timeline - can be exported to spreadsheet
- Save complex Notes for re-use in other compositions and projects
- Recall/Append notes on a per layer basis including keyframes

External Colour Panel

(Option for Finish only)

- Avid Artist Panel

VTR I/O

(Video, Refine & Finish)

- VTR capture and Playback
- 422 Control
- Conform from EDL
- Support for embedded audio ingest and layoff
- Source order layoff
- SMPTE and CGR
- Preview
- 4:4:4: Ingest & Layback

Monitoring (DVS Atomix HDMI)

- SD PAL/NTSC
- HD 1080 and 720 P and I Formats
- 444 and 422
- UHDTV 3840x2160p
- 23.98, 24, 25, 29.97, 30 FPS
- 4K 4096x2160p 23.98, 24
- 3G monitoring support

File I/O

- Floating Point File I/O
- OpenEXR with header T/C support
- OpenEXR Compressed formats
- ACES (SMPTE "ACES Image Container File Layout") export as an option in the EXR export menu
- 8 / 10 / 12 / 16 bit DPX file
- B & W Single channel DPX support
- 12 Bit DPX support
- YUV colour space export.
- CIN
- TIF
- SGI
- TGA
- JPG
- PIC
- EXR
- Support for KODAK DICE images (Embedded Alpha)
- Completely configurable Render Output Path with user definable presets and Preset variables
- Export with Source or Record timecode and as source clips.
- Canon EOS MXF (XDCAM50)
- Canon 5D / 7D
- AVC Intra 100
- DVCPRO
- Panasonic P2
- Sony SR Master (SSTP MPEG-4) F65 MXF
- Quicktime - Import and Export.
- Apple ProRes - all formats
- Export of Audio with Quicktime files
- Export of MXF OP-Atom (Requires Adv Codecs)
- Export of MXF OP1A (Required Adv Codecs)
- Completely configurable Render Output Path with user definable presets and Preset variables
- Export with Source or Record timecode and as source clips.

Christian Lurin, Éclair manufacturing manager explains:

We have a very powerful Phoenix system, which includes a 64 Bit version of their Colour Management System. We asked Digital Vision to develop this for us specifically for this project and it has worked incredibly well.

File I/O - Advanced Codecs

(Option for Finish and Video)

- Import AAF - Including audio tracks.
- Import Avid's Multi-layer timeline.
- Export AAF
- Avid Interplay Support
- MXF Import and export (OP1a)
- Uncompressed MXF
- RGB 4:4:4:Uncompressed MXF
- DNxHD
- XDCAM HD
- DVCAM
- Please contact us for a full list of supported MXF Formats

RAW File Support

(Option for Finish only)

- Arri D-21 support
- Arri Alexa RAW
- RED - RAW support
- RED R3D - EPIC support
- Silicon Imaging SI-2k support
- Phantom Camera support
- P2
- Sony SRMaster (Mpeg-4 SStP files)

Specialist Comparison Modes

- Diff Red
- Diff
- Diff multiply
- Mono Checkerboard
- Split screen
- Dual screen
- Blend
- Anaglyph
- Checkerboard

Comparison Sources

- Playheads (ABC or D)
- Notes
- Tracks
- Events (Phoenix Finish)
- Source
- Revert

Viewer Tools

- Histogram
- User definable Grids
- User definable Frames
- User definable Metadata overlay
- R / G / B Channel isolation
- Matte and Alpha view
- User definable Masks
- Source/Output/Selected

Plug-ins

- OFX Compatible

Effects - Including Isolation Tools

(Video, Refine & Finish)

- 3:2 Pulldown
- Blur
- Channel Extract (RGB)
- Convert
- Fade Colour
- Field Dominance Correction
- Field remove
- Field swap
- Invert
- Keyer (HLS / Luma / RGB / IKeyer)
- Paint
- Re-FlickerInterlace
- Retime
- Composite tools
 - Blend - Incl. Blending Modes
 - Channel Combiner
 - Over
- Transition
 - Dissolve
- Generators
 - Source generator
 - Test Pattern

Effects Layers - Isolation tools

(Video, Refine & Finish)

- External Matte Support
- Shapes (Circle, Square, Bezier, Catmull Rom Splines)
- Softness in/out and variable shape softness)
- Auto tracking of shapes
- Auto tracking by shape deformation
- Point tracking
- HLS / Luma / RGB and IKeyer

Colour Tools - Master Layer

(Finish only)

- Balance
- Channel Mixer
- Gamma Matrix
- HLS - incl Sat over Luma control
- Hue curves
- Saturation
- SOP (Slope Offset Power - CDL)
- Printer Lights
- Levels (including Auto level)
- Lift Gamma Gain
- Colour Curves
- Brightness Contrast
- RGB Curves
- Brightness Regions
- Soft Clip

Transform Tools

(Video, Refine & Finish)

- Pan & Scan
- Blanking
- Rotation
- Warp 9 - Nine point warper
- Warp 4 - Four point warper
- User Definable Mesh Warper
- Lens Distort / undistort

Colour Management

- CMS Layer FX
- 1D & 3D LUT Support
- Aces (option for Touch, Video and Refine)

Davide Pozzi, Director L'immagine Ritrovata says:

We were looking for new software that could implement the existing restoration workflow. The Phoenix systems' strong motion estimation pedigree, based on years of experience, was a strong deciding factor for this new workflow as was its extensive toolset, automatic capabilities and full technical support.

Digital Vision provided excellent training and the fact that we knew that we would have full support in future implementations often based on our feedback, gave us a lot of confidence in the system and made us look at the Phoenix systems as an investment.



After repair using DVO Fix
Image courtesy of Pathé

We are committed to resolve any product problem as quickly, efficiently and effectively as possible. Through these services, we share our expertise to help you better manage your enterprise.

If you require technical support or have licensing questions please contact us:

For customers in EMEA and APAC

E-mail: support@digitalvision.se

Tel: +44 (0)20 7734 8282 or Tel: +46 (0)8 546 182 00

For customers in the Americas

E-mail: support@digitalvision.se

Tel: +1 (818) 769-8111

If you are a Phoenix user we recommend that you sign up to the Digital Vision User Forum:

<http://forum.digitalvision.tv>

Image Systems AB (HQ)
Ågatan 40
SE-582 22 Linköping
Sweden
Tel:+46 (0)13 200 100
Fax:+46 (0)13 200 150

Digital Vision
Telefonvägen 30
126 26 Hägersten
Sweden
Tel:+46 (0)8 546 18200
Fax:+46 (0)8 546 18209

Digital Vision (UK)
11 Wardour Mews
London, W1F 8AN
United Kingdom
Tel:+44(0)20 7734 8282
Fax:+44(0)20 7292 6969

Digital Vision Systems Inc.
6464 Sunset Blvd
Suite 830
Hollywood
CA 90028USA
Tel:+1 818 769 8111
Fax:+1 818 769 1888

DigitalVision
www.digitalvision.tv