EDIUS Editing Solutions

canopus®

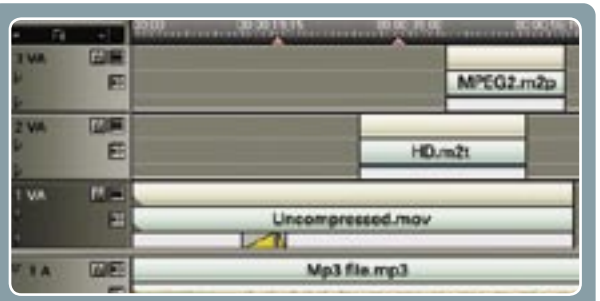
EDIUS - Beyond Editing

EDIUS solutions are created to enable visual communications and storytelling with unprecedented productivity. EDIUS frees video editors from the limitations of conventional editing systems by providing a seamless realtime workflow, supporting all video acquisition formats in any studio environment.

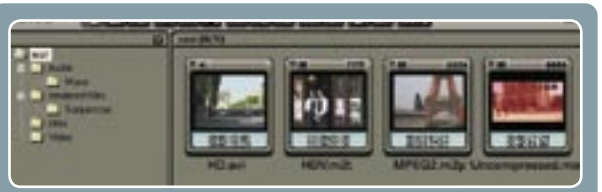
1. Editing multiple video formats together in realtime

EDIUS solutions set an entirely new level in editing productivity by offering realtime, mixed format editing not rivaled by any other system.

EDIUS Pro Output



EDIUS Pro Timeline



EDIUS Pro Clip Bin

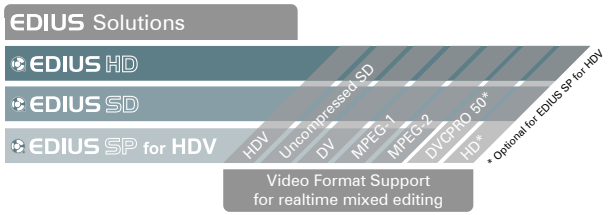
Editing Multiple Video Formats Together in Realtime

EDIUS solutions set an entirely new level in editing productivity by offering realtime mixed format editing not rivaled by any other system.

Canopus has long been regarded as a leader in high-quality, high-performance video codec technology and today, more video professionals rely on acclaimed Canopus technologies for multi-format video transcoding, realtime nonlinear editing and frame-accurate MPEG editing.

EDIUS can seamlessly edit in realtime any mix of HD, HDV, DV, uncompressed, MPEG-2 and MPEG-1 video, maintaining the full native format, resolution and color space quality of all video clips. The EDIUS engine is resolution and framerate independent to ensure support of future video codecs and formats.

The productivity gains from realtime mixed format editing are immense as there is no time-consuming format pre-conversion or preparation required prior to editing.



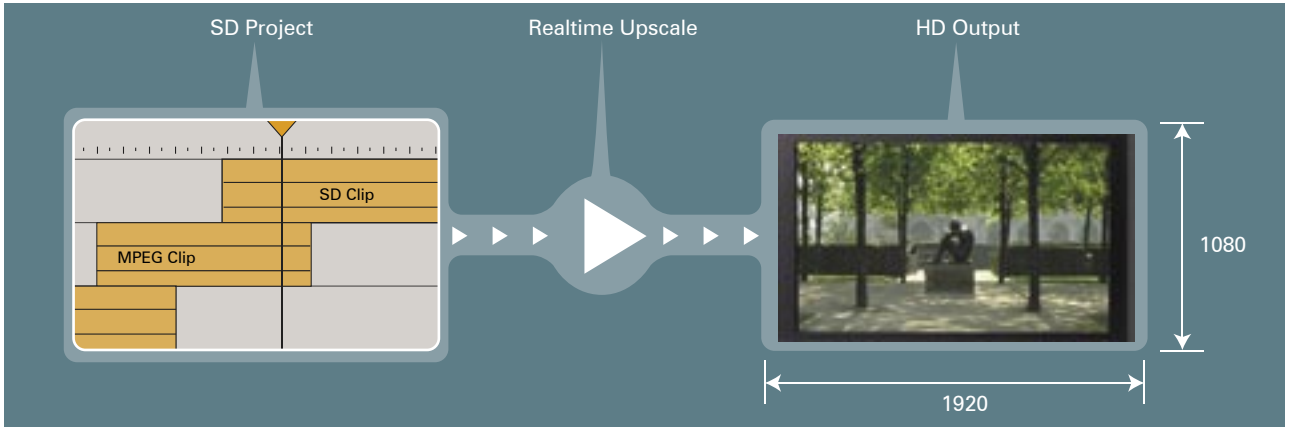
Realtime HDV editing

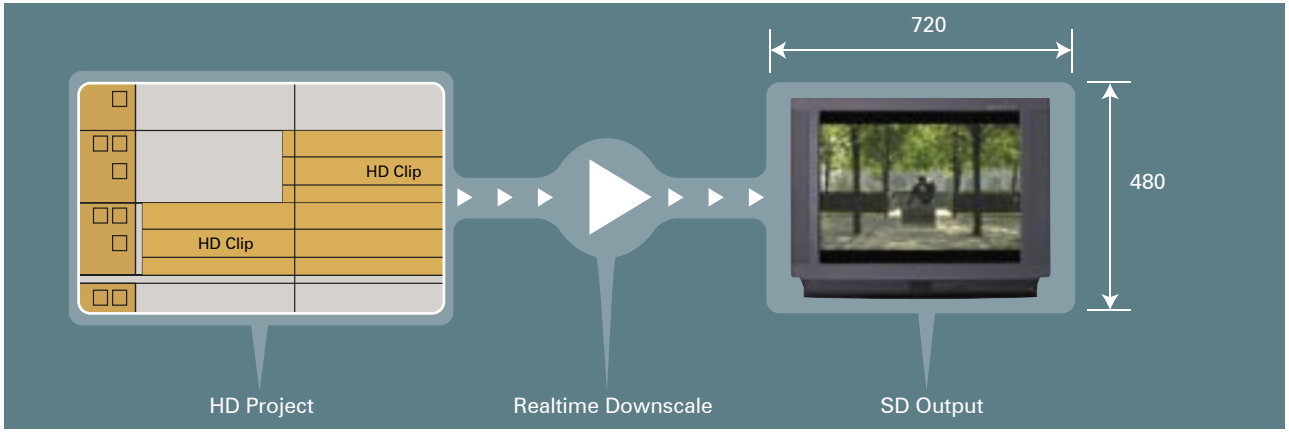
When it comes to realtime editing of HDV and other MPEG formats, Canopus's leadership in advanced video codec technologies becomes clear.

HDV / MPEG video formats use a complex inter-frame delta compression structure to achieve high quality video at low data rates. Precise, high-quality frame-accurate editing of these formats is very difficult, exceeding the capabilities of most NLE systems. Realtime, multi-track, mixed HDV / MPEG editing with other formats is a capability that is only found in EDIUS Pro.

2. Video output of different formats in realtime

EDIUS not only provides realtime mixed format editing, but also realtime video output to any format





Video Output of Different Formats in Realtime

EDIUS Pro not only provides realtime mixed format editing, but also realtime video output to any format. This means that all aspect ratio conversions between 4:3 and 16:9 video, as well as up-res and down-res conversions between standard and hi-definition video are processed in realtime.

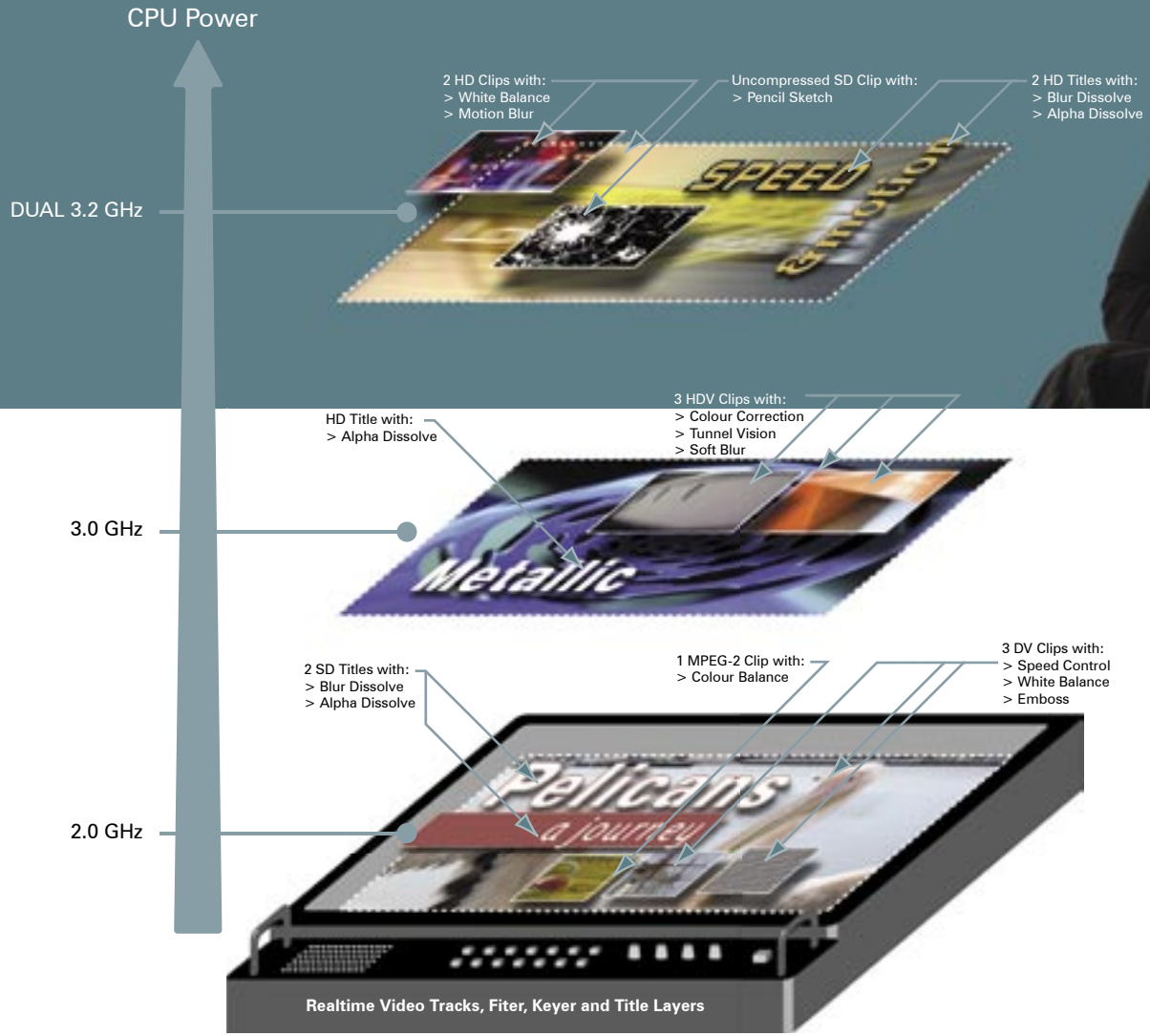
For example, EDIUS Pro can up-res a mix of SD MPEG-2 and DV footage for output to HDV or HD in realtime. EDIUS Pro can also down-res a HD project for output as uncompressed SD video in realtime. Realtime output not only provides instant results to tape or monitors, but also delivers any video in the format required.

The EDIUS Pro Video Layout Tool is particularly useful when using mixed video formats as it provides realtime adjustment of video clip scaling, cropping and positioning. EDIUS Pro preserves the original quality and resolution integrity of all clips, so it is possible to scale up higher definition video clips within a standard definition project without quality loss. The Video Layout Tool is realtime, so any resolution changes can be previewed and output instantly.

> EDIUS Pro Video Layout Tool

3. Future-proof scalability: realtime performance increases as CPU power increases

With Scalable Technology, there are no limits to the number of video tracks, the number of graphic and title layers or the number of effects that can be output in realtime.



Future-Proof Scalability: Realtime Performance Increases as CPU Power Increases

Other realtime video editing systems are restricted to processing only two video and graphics tracks simultaneously for realtime video output. EDIUS editing solutions are designed on Canopus's Scalable Technology which ensures that there are no performance limitations in the number of video tracks, the number of graphic and title layers or the number of effects that can be output in realtime. Future-proof scalable design provides a long product life and high return on investment.

> The EDIUS Pro interface accomodates both single and dual display configurations

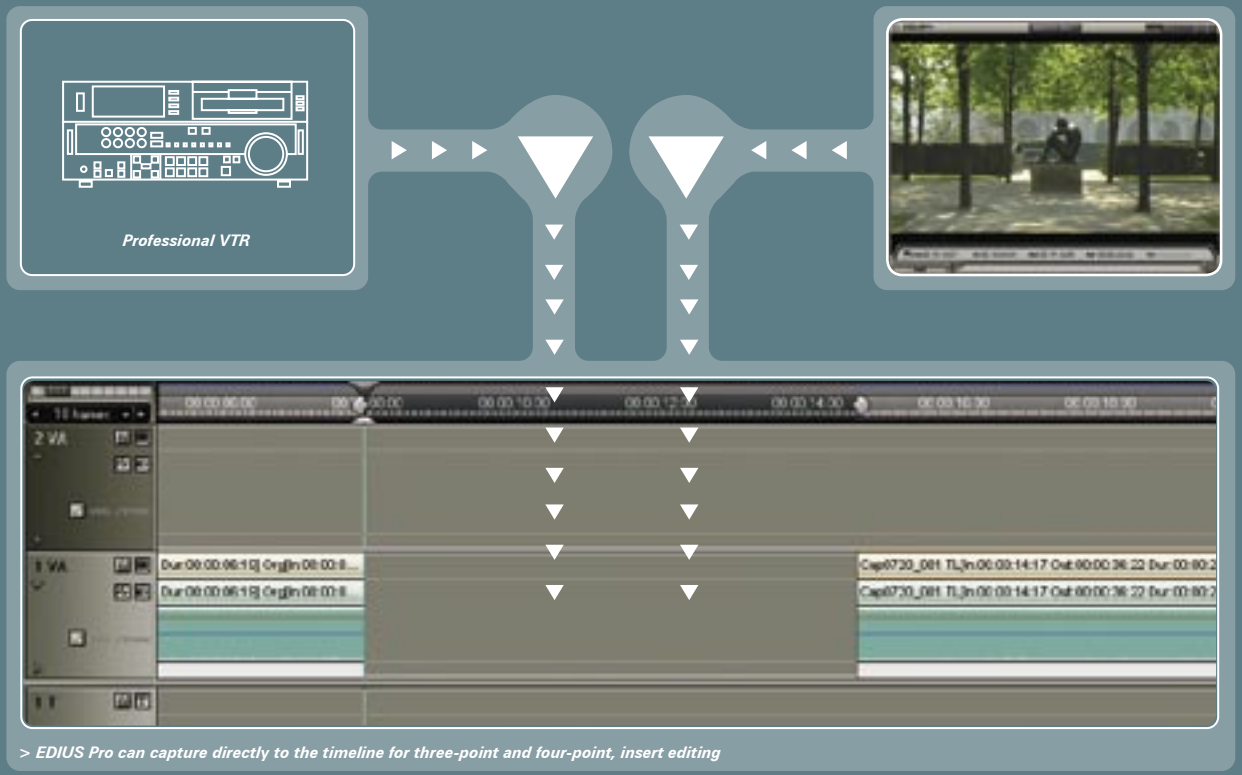
Fast, Flexible Interface and Design

EDIUS Pro offers powerful customization control over the appearance and functions of the user interface. Features include a floating window design with adjustable preset positions, options to add and remove EDIUS Pro function buttons within each window, and a keyboard shortcut mapping utility that provides users with the ability to change virtually any keyboard commands to suit their workflow.

The EDIUS Pro interface also features advanced bin window media management and searching tools, productive yet simple mouse gestures for clip trimming, scrubbing and playback, and a realtime Vectorscope and Waveform monitor for detailed analysis of footage while capturing and editing.

> Customize the function buttons that appear in EDIUS Pro windows

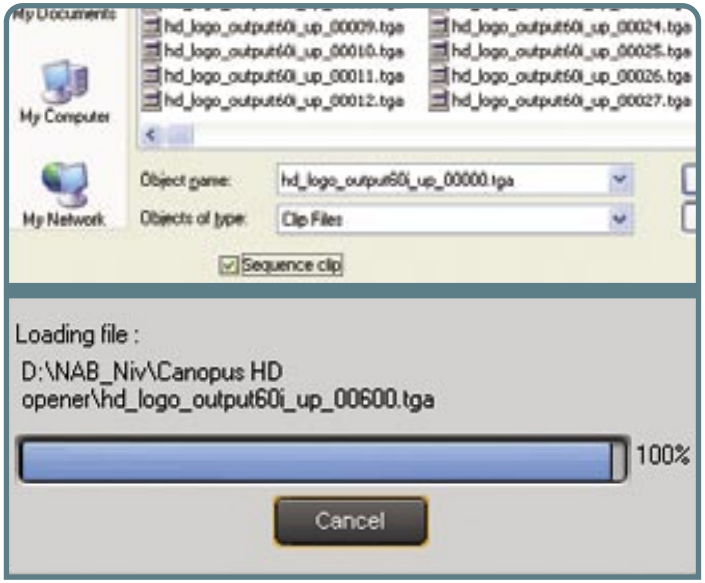
> EDIUS Pro windows can be arranged anywhere on the screen to create new layouts, which can be saved for later use



> EDIUS Pro can capture directly to the timeline for three-point and four-point, insert editing

> ProCoder Express for EDIUS

Editing operations within EDIUS Pro are engineered for high-speed productivity, without compromising on quality. EDIUS Pro editing modes include ripple, slip, V/A split, slide and rolling, as well as combinations of these modes. With EDIUS Pro, editors can also easily speed up, slow down or even reverse the playback of any clip and get instant, high-quality realtime playback and output.



> Still image sequences can be imported and handled as a single clip

The EDIUS Workflow: Importing, Editing and Exporting

EDIUS Pro provides simple, streamlined and responsive controls for importing of media into a project. EDIUS Pro capturing modes not only include industry-standard options for batch capturing and scene-detection, but also allow editors to perform three and four-point edits of footage from an external VTR and directly place them onto the timeline.

In addition to extensive video format support, EDIUS Pro can also import many popular digital media formats such as 32-bit QuickTime™ clips, MP3 audio files and Adobe® PhotoShop® images. EDIUS Pro also features a still image sequence importer to allow editors to quickly import compositions created in other third-party 3D modeling and animation packages.

Upon completion of a project, EDIUS Pro offers export support to all widely used file formats and mediums with ProCoder Express for EDIUS. Built with the same high-speed, high-quality encoding and media technology found in Canopus ProCoder 2.0, ProCoder Express for EDIUS exports to QuickTime, Windows Media™ and DivX®, along with MPEG-1, MPEG-2, DV, HDV and more.

With ProCoder Express for EDIUS, any project can be exported and burned directly to DVD from the timeline, complete with chapter points. EDIUS Pro also takes advantage of Canopus realtime MPEG encoding hardware where available (either included or available optionally for all EDIUS solutions).

4. Realtime effects and titles in HD and SD

EDIUS empowers editors with an array of realtime filters, keyers and transitions to refine and enhance video projects, without the need for rendering

> *Original video*

> *Old Movie*

> *Original video*

> *Pencil Sketch*

> *Video to key*

> *Background video*

> *Video to key*

> *Background video*

Realtime Effects and Titles in HD/SD

EDIUS Pro empowers editors with an array of realtime filters, keyers and transitions to refine and enhance video projects, without the need for rendering

Realtime effects, filters and keyers within EDIUS Pro can be stacked and used in any combination to provide unrestricted creativity. Video and audio effects may be customized and saved as presets for use in future projects.

Video Filters and Effects

EDIUS Pro features 28 different realtime video filters to style, enhance or correct any video project. Each filter offers simple yet powerful adjustment controls to further refine an effect.

Realtime keying effects, such as Chroma key, are also included for compositing. With realtime, multi-track editing power and intelligent keying controls, any sequences that feature Chroma key, Luma key or Picture-in-Picture effects, can be previewed and output instantly.

> Old Movie
> Color Correction

> Old Movie
> Color Correction
> Region Filter to achieve a 16:9 look

> Chrominance

> Soft Focus

> Chroma key result 1

> Chroma key result 2

> Inverted Luma key result

> Inverted Luma key result
rekeyed with third video

> Xplode for EDIUS

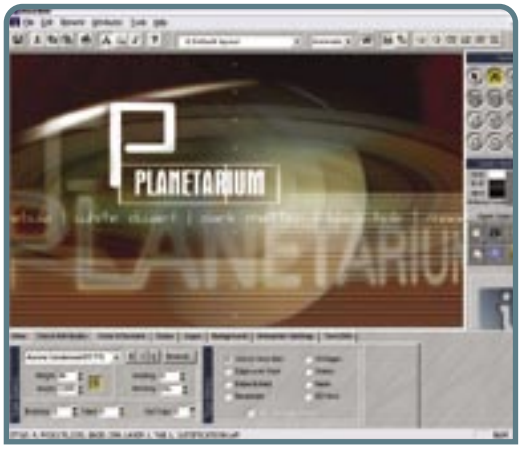
Transitions with EDIUS FX and Xplode for EDIUS

EDIUS Pro features Xplode for EDIUS and EDIUS FX, advanced 2D and 3D video effect engines. These transition effects incorporate proprietary Canopus Effects Technology and provide the power to create stunning and professional quality video transitions. With over 40 transition groups to choose from, each with customizable options, controls and numerous presets, Xplode for EDIUS and EDIUS FX provide sophisticated power for the demanding video editor.

> VST Audio Plug-in

VST Audio Plug-in Support

In addition to the included audio filters, EDIUS Pro can make use of any third-party audio effects that make use of the Virtual Studio Technology (VST) interface standard. This allows any number of additional realtime audio effects to plug into EDIUS Pro for more sophisticated audio editing.



> Inscriber® TitleMotion™ Pro

Inscriber® TitleMotion™ Pro for Canopus

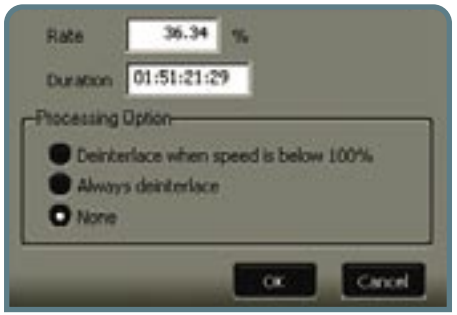
A co-developed solution created by Canopus and Inscriber, TitleMotion Pro for Canopus is a specially-optimized, full version of the popular broadcast titling package, which provides editors with tools to create high-quality titles with realtime preview and playback during composition in either SD or HD. Featuring keyframed animation capabilities within both 2D and 3D spaces, TitleMotion Pro can produce polished, broadcast titles within minutes. TitleMotion Pro titles can be created and stored within the Bin window, or created directly from the editing timeline.

EDIUS Pro Software Feature List

User Interface

Floating window user interface for easy workspace customization.
(Customizable for single and dual monitor setup)

> Dual or single preview windows (recorder and player)
> Up to 10 user-definable workspace layouts
> Customizable toolbar buttons
> Customizable keyboard shortcuts
> Renaming of video, audio and title tracks
> User-definable effects presets and folders
> Re-mapping of missing media clips
> Timecode and VU meter overlay display
> Timeline window
> Bin window
> Effect selector window
> Information window
> Marker window
> Realtime waveform and vectorscope window (available while capturing and previewing Video)



> Realtime adjustable speed control

Timeline Editing

Fast and flexible timeline editing for efficient workflow and increased productivity.

> Unlimited video tracks
> Unlimited title and graphics layers
> Unlimited audio tracks
> Audio waveform display
> Transparency track keyframe
> Audio volume / pan keyframe
> Lock / Hide tracks
> Three-point editing
> Four-point editing (fit to fill with realtime speed control)
> Ripple editing
> Slip, slide and roll editing (performed while viewing in / out points)
> Video / audio split editing
> Voiceover recording support
> Realtime audio output mixer
> Multiple clip selection for moving, cutting and copying
> Apply filters and transitions to multiple clips
> Clip division through all tracks
> Video/Audio unlinking
> Transition on same track (all tracks)
> Transition between video tracks
> Tools for realtime cropping, scaling and frame repositioning
> ShuttleScrub preview window control
> Unlimited undo / redo levels
> Auto save feature

Effects

> Simultaneous realtime effects for unlimited creativity
> Realtime video and audio tracks
> Realtime title and graphics tracks
> Realtime video filters:
- Anti Flicker, Blend Filters, Block Color, Blur, Chrominance, Color Balance, Color Wheel, Combine Filters, Emboss, Loop Slide, Matrix, Median, Mirror, Monotone, Mosaic, Motion Blur, Old Movie/Film, Pencil Sketch, Raster Wipe, Region, Sharpness, Smooth Blur, Soft Focus, Strobe/Freeze, Tunnel Vision, Video Noise, White Balance, YUV Curve

> Realtime audio filters:
- Delay, Graphic Equalizer, High-pass Filter, Low-pass Filter, Panpot and Balance, Parametric Equalizer, Tone Controller

> Realtime video keyers:
- 3D Picture-in-Picture, Chroma Key, Luma Key, Picture-in-Picture

> Realtime 2D and 3D transitions (including SMPTE transitions)
> Realtime title effects
> VST audio plug-in bridge (VST plug-ins not included)

Titles

> Inscriber® TitleMotion® Pro for Canopus
> Realtime roll / crawl
> Animated titles with 3D effects and motion

Video/Audio Input

> Full DV deck control capture
> Batch capture
> Direct-to-timeline capture
> Audio-only capture
> Automatic file division capture at date and timecode break
> 32-bit uncompressed video import (for video clips with alpha)
> EDL import - BVE-9100/5000 and CMX-340
> Direct CD / DVD clip import
> Analog deck control capture with RS-422

Video/Audio Output

> Realtime DV output from timeline
> Embedded timecode on exported video
> TGA file sequence export
> MPEG-1 and MPEG-2, Windows Media™, RealVideo®, QuickTime™ and DivX® export via ProCoder Express for EDIUS
> Direct-to-DVD timeline export
> Hardware MPEG encoder support for Canopus MVRD2200 and MPEGPRO MVR
> High-quality Canopus HD, DV and MPEG codecs

Bin Media Clip Handling

> Group selection of media
> Multiple folder support
> Detailed list folder view
> Media clip search options
> Drag-and-drop file/folder import from Windows Explorer
> Adjustable video clip aspect ratio and field order
> TGA file sequence importer
> Supported video file formats:
  - MPEG Video Stream (*.mpv; *.m2v)
  - MPEG Program Stream(*.mpg; *.mpeg; *.m2p; mp2)
  - DV, uncompressed AVI (*.avi)
  - QuickTime (*.mov)
> Supported image file formats:
  - Inscriber (*.icg; *.ips)
  - Targa (*.tga; *.targa; *.vda; *.icb; *.vst)
  - Windows Bitmap (*.bmp; *.dib; *.rle)
  - JPEG (*.jpg; *.jpeg; *.jfif)
  - Flash Pix (*.fpx)
  - TIFF (*.tif; *.tiff)
  - Photoshop (*.psd)
  - Portable Network Graphics (*.png)
  - PICT (*.pic; *.pct; *.pict)
  - QuickTime Image (*.qtif; *.qti; *.qif)
  - Silicon Graphics Image File (*.sgi; *.rgb)
  - CompuServe GIF (*.gif)
  - Windows Meta File (*.wmf)
  - Wave File (*.wav)
> Supported audio file formats:
  - Aiff File (*.aif; *.aiff)
  - Ogg Vorbis File (*.ogg)
  - MPEG Audio Layer-3 (*.mp3)
  - MPEG Audio Stream (*.mpa; *.m2a)
> Clip sorting functions:
  - File name
  - Clip name
  - File size
  - Date

Supported Hardware

> IEEE 1394 FireWire
> EDIUS for HDV series
> EDIUS HD / EDIUS SD

> Adjust the field order of imported clips in realtime

5. EDIUS Solutions: Broad video equipment connectivity and control

EDIUS solutions combine unprecedented, scalable realtime mixed editing performance with high-quality hardware video I/O, to provide connectivity to all video equipment in any studio environment.

EDIUS SP for HDV

EDIUS SP for HDV is the most advanced prosumer nonlinear editing solution in its class. Boasting hardware editing acceleration and high-quality video input and output circuitry, EDIUS SP for HDV interfaces with professional and consumer video equipment, including HDV, DV, BetaCam SP and all consumer analog formats, with optional native editing support available for DVCPRO 50 and DVCPRO HD.

Complete HDV Input/Output

While editing HDV, the ability for editors to view their compositions accurately is critical, and only a HD monitor can faithfully display HDV output modes including 1080i. EDIUS SP for HDV includes specialized HDV hardware featuring component HD video output for high-quality monitor preview. EDIUS SP for HDV also features digital HDV I/O, providing precise HDV device control, capture, output to tape and insert editing capabilities.

Realtime Multi-format Analog Capture

Using EDIUS SP for HDV's extensive analog inputs, editors can, in realtime, convert and capture video to Canopus's high-quality codecs, including lossless, uncompressed and DV25, as well as the optionally-available DVCPRO 50 codec.

Migrate DV content to enhanced HDV in realtime

EDIUS SP for HDV is ready to move existing standard definition video to the world of HD. With one simple setting, EDIUS SP for HDV edits DV content in HD resolution, while providing output to HDTV monitors using the onboard HD component output. EDIUS SP for HDV provides the highest quality realtime up-res conversion from standard definition to high definition video, and all project titles, graphics and effects are performed in HD resolution.

Ensuring a painless transition to the world of HD, editors can edit and output newly-created HDV content to hard disks or DVD-R drives without requiring an HDV camera or deck.

High-quality Video Equipment Connectivity and Synchronization

EDIUS SP for HDV's expansive inputs and outputs provide connectivity to a broad range of analog and digital video equipment. Featuring component analog video I/O, balanced audio I/O, component HD video output and an external reference sync input, EDIUS SP for HDV can integrate into any existing studio environment.

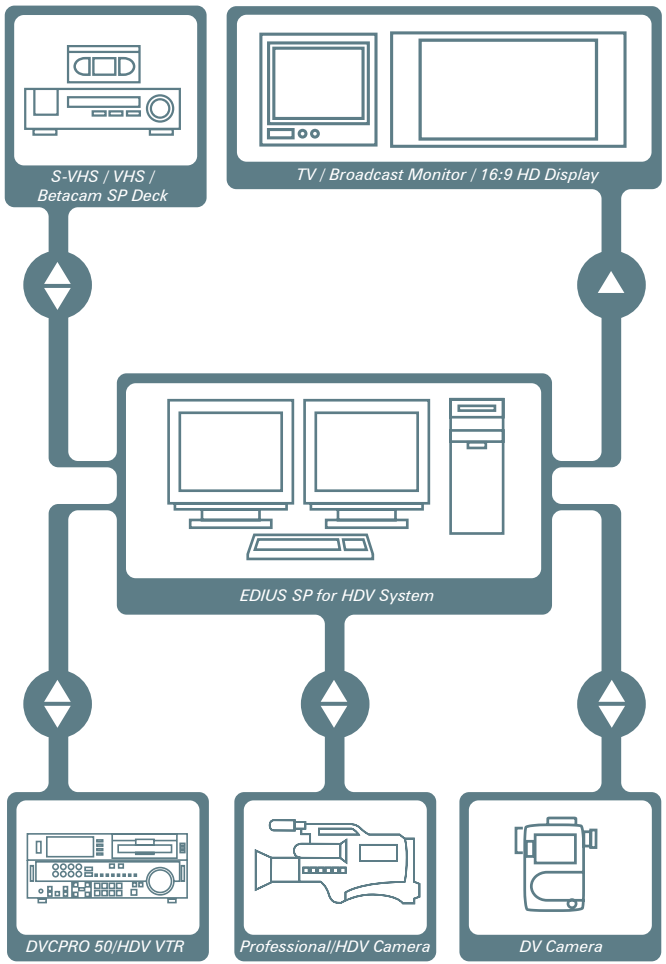
Adjust and Enhance Analog Video

EDIUS SP for HDV employs advanced image enhancement technology to adjust and filter analog source video prior to capture. Adjustment features include luminance, chroma and hue color controls, as well as 3D Y/C separation and 3D noise reduction filtering on analog video input.

EDIUS SP for HDV baseboard

HD component output module

Video Input/Outputs	Supported Video Formats
HDV / DV (IEEE 1394) 4-pin	DV, DVCPRO 50, Mini DV DVCAM, Digital VHS,
Composite video (CVBS), RCA jack	S-VHS, Hi8
S-Video (Y/C), miniDIN	VHS, S-VHS, Hi8
Component (YUV), BNC jacks	BetaCam SP
REF signal sync input	
Audio Inputs/Outputs	
Balanced audio 2 channel XLR jacks	BetaCam SP
Unbalanced stereo pair RCA jacks	VHS, S-VHS, Hi8
Component HD / SD output BNC jacks	HD Monitor
Unbalanced stereo audio jack	VHS, S-VHS, Hi8



EDIUS SP for HDV Key Hardware Benefits

> Optimized, realtime integration and acceleration with EDIUS Pro software

> Extensive analog and digital video equipment inputs/outputs, including RS-422 control and external reference sync input

> Additional component HD/SD video output for broadcast monitor preview

> Onboard DV hardware codec

> Advanced analog video adjustment, enhancement and synchronization technology

> Analog video capture to lossless, uncompressed, DV, MPEG-2 and MPEG-1 formats†

> Precise RS-422, DV and HDV device control

> VTR control via AV/C-RS-422 conversion*

> Realtime bidirectional analog / DV conversion and capture (ADVC functionality)*

> Realtime editing plug-in for Adobe® Premiere® Pro

> Scalable, future-proof hardware and video codec design for unrestricted realtime capabilities and long product life

**Compatible with popular Windows® NLE applications that support OHCI, including Adobe Premiere Pro, Avid Xpress® DV, Vegas® and more*

†DVCPRO 50 and DVCPRO HD codec pack is available as a separate option for EDIUS SP for HDV

Onboard Canopus Hardware DV Codec with ADVC Functionality

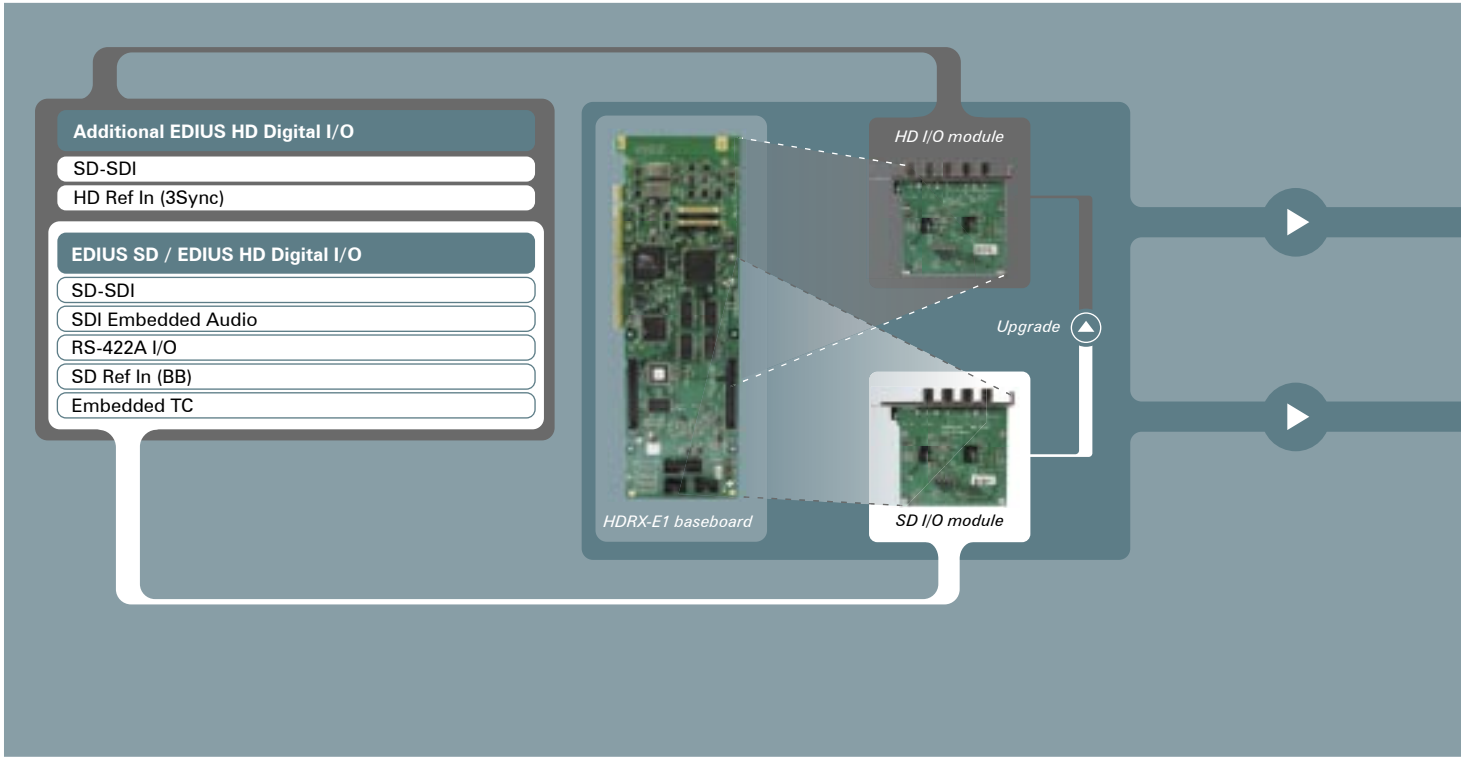
EDIUS SP for HDV features Canopus's proprietary DV codec chip, also found at the core of Canopus's acclaimed line of ADVC products. This DV codec chip provides the best picture quality preservation and audio/video synchronization during analog-to-DV and DV-to-analog conversion.

The DV codec chip greatly increases EDIUS realtime editing capabilities by providing constant, realtime DV output from the timeline, without impacting on system performance or limiting the number of realtime video tracks.

EDIUS SP for HDV is also the first nonlinear editing system to feature full ADVC functionality. Available from both EDIUS Pro and any other Windows-based NLE application that supports OHCI, EDIUS SP for HDV provides realtime bidirectional analog/DV conversion and capture. This feature is also available independently of any editing application to provide direct analog/DV deck video transfer. EDIUS SP for HDV also features AV/C-RS-422 control conversion, to provide control of analog VTRs from within any NLE application, as though they were a DV device.

EDIUS HD

EDIUS SD



EDIUS HD/EDIUS SD

EDIUS HD is Canopus's flagship nonlinear editing platform, providing uncompromised performance and features in an affordable, complete HD solution. EDIUS SD features the same base software / hardware design used with EDIUS HD and has been designed for studios currently using standard definition video equipment, who require the option to be easily upgraded to a full EDIUS HD solution.

The Complete Realtime HD / SD Editing Solution

EDIUS HD is a professional realtime HD / SD online content creation solution for broadcast studios. The combination of hardware and software gives EDIUS HD realtime capabilities that are unrivaled by systems costing ten times its price, and provides professional HD editing and content creation capabilities to suit any environment. EDIUS HD and EDIUS SD solutions are completely developed internally by Canopus and are comprised of three key components; EDIUS Pro application software, built with Canopus Scalable Technology for realtime HD/SD processing, the Canopus HD and HQ software codecs, and the HDRX-E1 input/output hardware card.

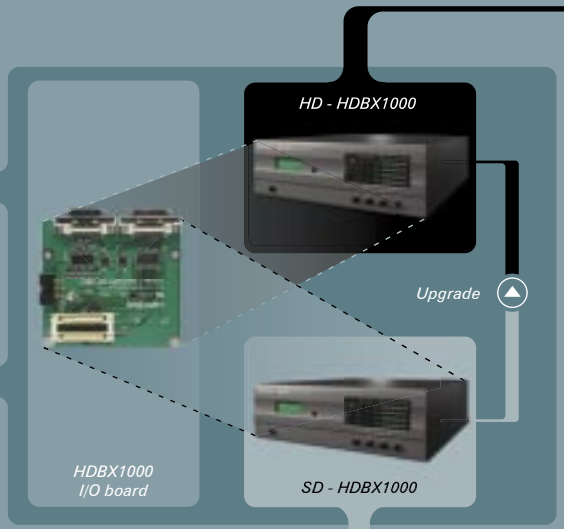
Canopus HD Software Codec

At the heart of EDIUS HD is Canopus's proprietary HD software codec. Developed through years of experience in video editing technology, the Canopus HD software codec provides high-quality, realtime compression, realtime processing, filtering and decoding of multiple HD streams. The Canopus HD software codec is native DVCPRO HD (SMPTE 370M) compliant and supports HD signal recording and playback from the hard disk to HD-D5, HDCAM or DVCPRO HD VTRs.

Canopus HQ Software Codec

EDIUS HD also features the revolutionary Canopus HQ codec. Built with Canopus Scalable Technology, this completely new codec offers the highest image quality and performance available today in any HD editing platform. The Canopus HQ codec not only provides superior Luma and Chroma sampling of HD video, but also features an adjustable bitrate, for increased video quality when capturing and encoding on high-performance systems.

Canopus HD Codec
Video Standard
NTSC (1080/60i), PAL (1080/50i)
Luma Sampling
1280 x 1080 *(pixels)*
Chroma Sampling
640 x 1080 *(pixels)*
Bitrate
100Mbps



EDIUS HDBX1000
Digital I/O
SD-SDI
HD-SDI
SDI Embedded Audio
AES/EBU Eight Channel
RS-422A I/O
SD Ref In (BB)
Sync Generator SD
Embedded TC
LTC In/Out
Analog I/O
Composite
S-Video
RCA Two Channel (Monitor Out)
Balanced Audio Four Channel
Analog Component Out (BNC and D-connector)
HD Component Out for HDV
RS-422A I/O

Additional HDBX1000 with HD Option
Digital I/O
HD-SDI
HD Ref In (3Sync)
Sync Generator HD
HD Locked BB
Analog I/O
HD Component Out for HD

EDIUS HD/EDIUS SD Options

> HDSC-1

Canopus HQ Codec

Video Standard
NTSC (1080/60i), NTSC (720/60p), PAL (1080/50i)
Luma Sampling
1440 x 1080 *(pixels)*
Chroma Sampling
720 x 1080 *(pixels)*
Bitrate
Variable Bitrate

Key Hardware Benefits

> Seamless realtime HD / SD mixed editing and integration with EDIUS Pro software

> High-quality Canopus HD and Canopus HQ software codecs

> Canopus HDRX-E1 - HD-SDI / SDI input and output board*

> SDI connectivity to all broadcast HD/SD VTRs

> Frame-accurate RS-422 VTR control and external reference sync input

> SDI embedded audio and embedded TC support

> Delivered within robust, high-performance turnkey workstation configurations

> Optional HDBX1000 with extensive input/output*

> Scalable, future-proof hardware and video codec design for unrestricted realtime capabilities and long product life

**SD model can be fully upgraded to HD*

Canopus HDRX-E1 - HD-SDI / SDI Input and Output Board

EDIUS HD and EDIUS SD feature a new proprietary hardware baseboard and input/output daughterboard. The HDRX-E1 includes an RS-422 connector to provide accurate VTR control, two output connectors, a reference input connector, and either an HD-SDI/SDI connector for EDIUS HD, or an SDI connector for EDIUS SD (upgradeable to HD-SDI).

EDIUS Multi-I/O Processing Unit for HD / SD

Available as an option for both EDIUS HD and EDIUS SD solutions, is the HDBX1000 Multi-format Digital Interface Unit. HDBX1000 is a professional, high-quality, three-unit rackmount device, featuring every conceivable connection a broadcast studio may require. The HDBX1000 unit and included proprietary control card are common to both EDIUS SD and EDIUS HD, with the latter featuring an additional internal HD module to facilitate HD I/O and provide realtime up/down-res conversion of SD and HD footage respectively.

HDSC-1 - HD-SDI/SDI to Analog Video Converter

Display HD and SD output from an editing system to plasma TVs, analog video monitors or computer displays - HDSC-1 is an ideal addition to EDIUS HD and EDIUS SD editing systems. HDSC-1 provides SDI output to component, RGB, S-Video and composite displays, and HD-SDI output to HD component televisions and CRT displays, such as PC monitors, that feature RGB BNC input. HDSC-1 also supports conversion of embedded audio to unbalanced audio.

Hardware MPEG Encoding Options

EDIUS HD and EDIUS SD both support Canopus's MVRD2200 and MPEGPRO MVR MPEG encoding solutions. These cards provide fast, high-quality, hardware-based encoding of MPEG-1 and MPEG-2 directly from the EDIUS Pro HD timeline.

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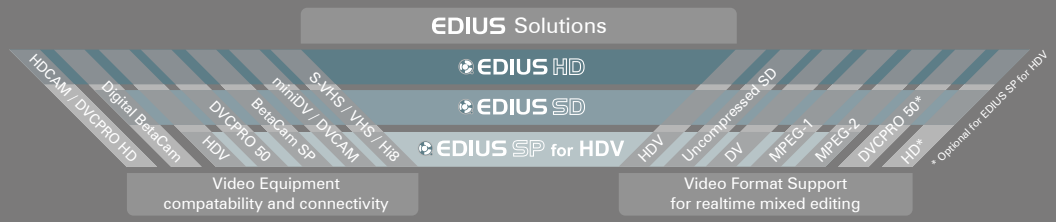

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