

Standing the Test of Time



Customer Testimonials

"We've had great success with Time Tailor. First, it truly simplifies our editing process- closed captioning stays intact and turnaround is fast. Second, the quality of the finished result is exceptional, without the varispeed artifacts."

—Deborah Rocklin,
Editorial Services for
Sony Pictures Entertainment

"...it's not 'just another' piece of post-production gear but a key part of the process of delivering programming. ...Time Tailor is a piece of technology that really gives you a whole different mind-set on how you can present your shows and your network."

—John McCarroll
VP of Performance Post

Company Profile

Prime Image pioneered the development of the first video time reduction process in 1995. Today the patented Time Tailor is the television industry standard in video time management.

Prime Image has a loyal blue chip customer base that owns video content and owns/controls its distribution. Our customers include TV broadcast networks, cable TV networks, Hollywood studios and post production houses.

Time Tailor Series

The Time Tailor is a proven solution that time reduces HD or SD video programming and is more flexible, efficient and affordable than non-linear solutions.

- It is the only "real-time", frame accurate process that digitally and undetectably removes duplicate frames.
- Selected segment run times are time reduced while leaving other program segments unchanged (advertising, credits and user specified segments).
- The synchronization and quality of the video, audio and closed captioning remain intact without using video bit compression or playout speed changes to reduce program total run time.
- It is the only solution that enables off line editing or real-time dynamic video time reduction for prerecorded programs or live events without altering scheduled ad spots.
- The TT 3500 is tape based and the new TT 4000 adds file to file processing capability.



Video Time Management

The Time Tailor allows the customer to:

- Increase program quality by airing more program content in less time
- Manage program run times to the clock
- Reduce program editing time and related costs

Time To Increase Profits

The Time Tailor makes more money for the TV industry than any other video time management solution.

Customers increase ad revenues by creating new ad spots without eliminating program content or changing the total run time of the program and by:

- Monetizing oversold ad spots
- Airing "make goods" and promos without bumping paying ad spots

IPTV

The Time Tailor is a core component in the "TV to Internet Convergence" and growing online video usage and can be used on any video platform.

The Time Tailor provides even greater IPTV cost savings (reducing streaming costs) and IPTV ad revenue opportunities than it does for the traditional broadcast/cable TV market.

FACT SHEET

1. Our patented Time Tailor is the industry standard in video time management.
 - Increase program quality.
 - Air more program content in less time.
 - Manage program run times to the clock.
 - Reduce program editing time and related costs.
2. The synchronization and quality of the video, audio and closed captioning remains intact without using video bit compression or playout speed changes to reduce program run time.
3. We create new ad revenue opportunities.
 - Monetize oversold ad spots.
 - Air "make goods" and promos without bumping paying ad spots.
4. We make more money for the TV industry than any other video time management solution.
5. We are positioned at the convergence of television content and emerging streaming HD video platforms and networks. Our patented Time Tailor time management solution can be used on any video distribution platform.
 - Emerging Platforms: Internet and mobile TV, tablets and other mobile devices
 - Traditional Platforms: Broadcast and cable TV
6. We reduce the costs of streaming video bandwidth and storage.
7. Our Time Tailor is a patented time proven solution that is more flexible, efficient and affordable than non-linear solutions.
 - We fit original theatrical and broadcast content to meet specific time and format requirements, including total length, timing of program breaks, and additional spot insertion for advertising, promotions, PSA's and government requirements.
 - We are the only automated frame accurate micro editing technology executed in real time.
 - We reduce segment run times while leaving other program segments unchanged (advertising, credits and user specified segments).
 - We work in real time during playout or off line in postproduction.
8. We have a blue chip customer base that owns video content and owns/controls distribution.
 - TV Broadcast Networks, Cable TV Networks. Studios, Post Production Houses

SPECIFICATIONS

Time Reduction

HD:	0 to 2 minutes in 1 frame steps
SD:	0 to 5 minutes in 1 frame steps

Video Processing

Signal	HD – 1.485Gb/s (SMPTE 292M) SD – 270Mb/s (SMPTE 259M)
Input	BNC, 75 Ω , 800 mVpp HD – Auto EQ to 100 meters (Belden 8281) SD – Auto EQ to 280 meters (Belden 8281)
Buffered Preview Output	BNC, 75 Ω , 800 mVpp, Reclocked SDI input
Outputs	2 BNCs, 75 Ω , 800 mVpp
Formats	1080i – 60/59.94/50 1080PsF-24/23.98 720p – 60/59.94/50 483i – 29.97 576i – 25

Closed Captioning

HD:	CEA-708 (frame accurate)
SD:	CEA-608 (frame accurate)

Audio Processing

Channels:	16, + Dolby-E (8 encoded channels)
Signal	Embedded, AES/EBU SD (SMPTE 272C) HD (SMPTE 299M)
AES/EBU	Inputs 8 BNCs, 75 Ω , Transformer coupled
AES/EBU	Outputs 8 BNCs, 75 Ω , Transformer coupled
Sample Rate	48KHz – synchronous
Resolution	24 bit

Dolby Processing

Format:	Dolby-E
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Control

Signal	RS-422
Connector	DB-9 (Sony pin-out)

Environmental

Power Supply	100 - 240 VAC, 50/60Hz, Auto
Power Dissipation	300 Watts Max
Height	5 U, 8.75 inches (22.2 cm)
Length	19 inches (48.3 cm)
Depth	22 inches (55.9 cm)
Weight	38.5 lbs (17.5 kg)



All specifications subject to change without notice.

TT 4000 = New IP File-Based Processing Capabilities in Real Time The Most Productive and Cost Effective HD/SD Video Time Reduction Solution

TT 4000 Standard Features

- Combines Native File A/V transcoding with TT3500 tape based processing in one solution
- Ingests media files from most video servers and storage devices via RJ45 interface
- File management user interface controls time reduction settings and commands
- Supports MXF and broadcast HD/SD audio/video file formats
- 2 minutes HD time reduction (5 minutes in SD)
- Supports encoded Dolby E audio signals

Additional Time Tailor Features

- Closed captions (CEA – 608 and CEA – 708) processed frame accurately
- 16 channels of audio processing (embedded or AES/EBU)
- Supports HD (1080psf24, 1080i, 720P) and SD (NTSC, PAL) formats
- Trim mode for time reducing short programs and promos
- RS-422 serial interface with optional remote control
- 2 U rack mountable TT 4000 unit + 5 U rack mountable TT 3500 unit

Customer Benefits

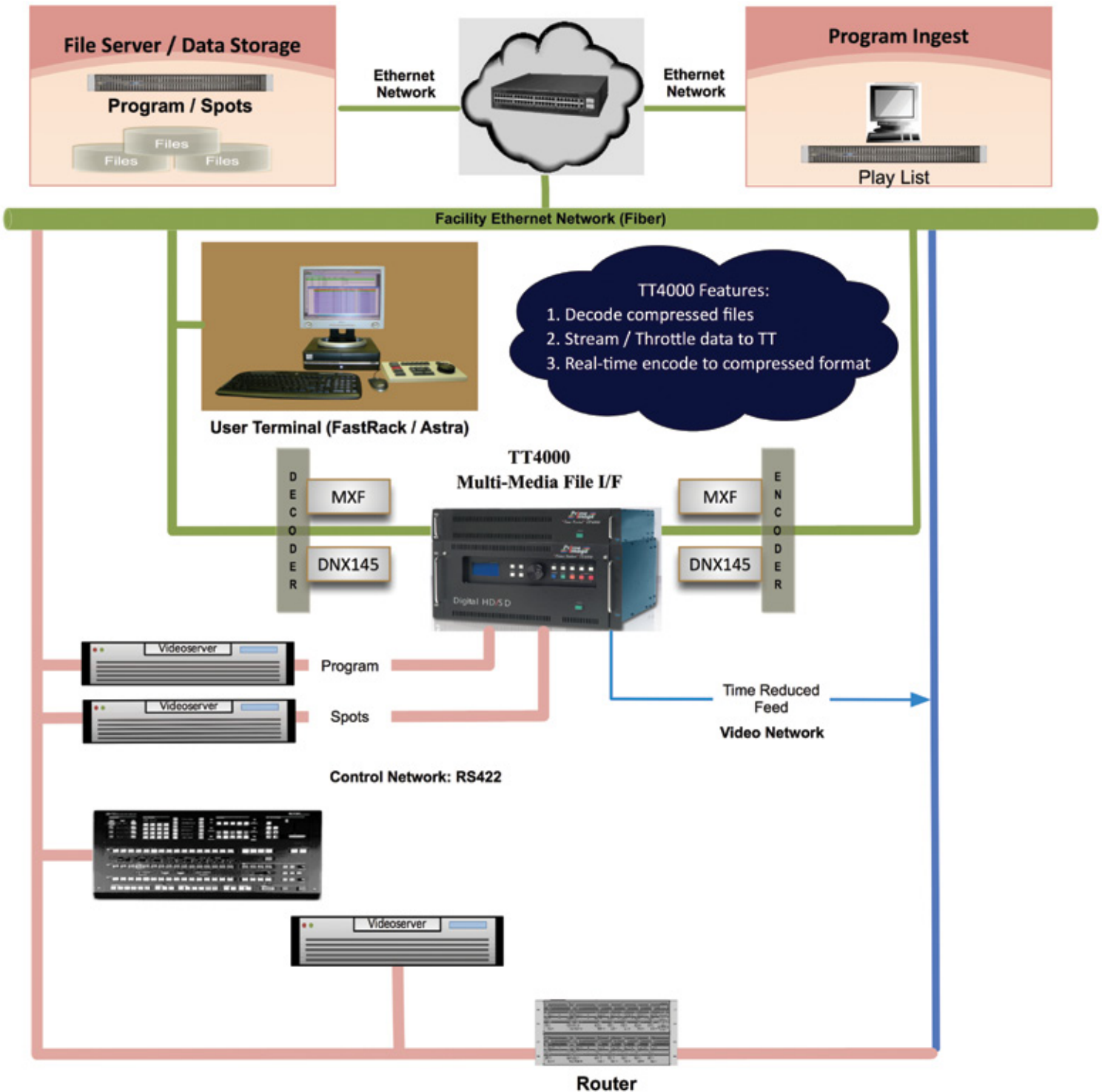
- Reduce segment run times while leaving other program segments unchanged
- Frame accurate micro editing processing of HD/SD video in real time
- Synchronization of the audio, video and closed captioning remain intact without using video compression or speeding up the video
- Create additional ad spots without disrupting the original program content
- Time reduction process is undetectable to the viewer

Upgrade Options

- Up to 3 additional Dolby- E processors.
- Existing TT 3500 licenses may be easily upgraded to the TT 4000 license.
- The 2U rack mountable TT 4000 provides network connectivity as well as SDI/HD – SDI inputs and outputs to and from the TT 3500 base unit.



The TT4000 is designed to ingest multi-media files from most video servers and storage devices. The embedded software will decode files for Time Tailor processing using the Fastrack interface as the edit controller. The diagram below shows the standard interfaces and data flow to both the Ethernet and Video networks.



Prime Image's Pipeline III provides an audio/video delay solution for HD or SD signals for the purpose of ensuring that live programming meets FCC regulations regarding profanity content suppression. The Pipeline III has been successfully used world-wide by major broadcast and cable networks, local stations, and stadiums.

FEATURES

- Up to 6.25-seconds HD, 30.5-seconds SD
- Profanity Switching with alternate "safe" inputs
- 2 GPI control inputs
- Programmable reaction time
- Clean switching (NO clicks or pops)
- 20 total channels of audio delay (4 AES + 16 Emb)
- Audio embedder/de-embedder with channel mapping
- 10-bit video processing
- 24-bit audio processing
- Video test pattern / Audio tone generator

Audio/Video Delay

The Pipeline III provides variable delay of high definition and standard definition signals at the main SDI input. The delay is adjustable in video frame increments of up to 6.25 seconds at 1080i resolution, and 30.5 seconds in standard definition. All vertical ancillary data (VANC), including Closed Captions (CEA-608/708), are delayed equal to the video signal.

All 16 embedded audio channels are de-embedded and processed independent of the video. Four AES audio inputs are also processed separately for a total of 20 channels. The audio delay automatically follows the video delay and may be offset by up to +/-500ms to allow for lip-sync correction.

Switching Capabilities

Controls are provided to eliminate objectionable material by individually switching the video and each audio channel to alternate "safe" signals. The video may be switched to an auxiliary input (Aux SDI), one of four captured still images, a freeze frame, a test pattern, or black. Each audio channel may be individually configured to switch to an auxiliary input (Aux SDI or Aux AES), another delayed audio channel, one of four tone generators, or mute.

Switching is performed via 2 GPI control inputs. Each switch may be configured to control video, or audio, or both. These same switches may also be set to switch instantly when the GPI is engaged, or wait and follow the video delay with a programmable reaction time. The delayed configuration allows the user to view the original source input, and engage the GPI when something objectionable occurs. When the audio and video signals arrive at the delayed output, the switch will occur timed with the objectionable event. If the reaction time was set for one second then the switch will begin one second before the objectionable event.

Video and Audio Processing

The main SDI input, and the Aux SDI input each have a full frame audio/video synchronizer. Full proc amps are provided for each of the SDI inputs, allowing the video's brightness, contrast, saturation and hue to be adjusted.

20 channels of delayed audio, 18 channels of AUX audio inputs (16emb + 2 AES), and 4 tone generators are all available for mapping into any of the output AES or SDI embedded channels. Any source may be selected for any output channel, including one source feeding multiple output channels. The mapping function also provides individual level adjustment and phase control for all output channels.



SPECIFICATIONS

Time Reduction

Max Delay	Delay Adjust
1080i-60/59.94	6 sec 10 frames
1080i-50	7 sec 15 frames
1080i/24/23.98	7 sec 22 frames
720p-60/59.94	7 sec 8 frames
720p-50	8 sec 28 frames
SD 483i (NTSC)	30 sec 28 frames
SD 576i (PAL) 31	sec 5 frames

Video Processing

Signal	HD – 1.485Gb/s (SMPTE 292M) SD – 270Mb/s (SMPTE 259M)
Input	2 BNC, 75 Ω , 800 mVpp HD – Auto EQ to 100 meters (Belden 8281) SD – Auto EQ to 280 meters (Belden 8281)
Output	BNC, 75 Ω , 800 mVpp HD Timing Jitter < 0.3UI SD Timing Jitter < 0.2 UI
Formats	1080i – 60/59.94/50 1080PsF-24/23.98 720p – 60/59.94/50 483i – 29.97 576i – 25 Resolution 10 bit, 4:2:2

Audio Processing

Signal	Embedded, AES/EBU SD (SMPTE 272C) HD (SMPTE 299M)
Inputs	3 BNCs, 75 Ω , Transformer coupled
Outputs	2 BNCs, 75 Ω , Transformer coupled
Sample Rate	48KHz – synchronous
Resolution	24 bit

Genlock Reference

Signals	Bi-Lev (Black Burst), Tri-Level
Inputs	2 BNC loop, Hi-Z

Control

GPI	2 BNCs, internal pull-up, Activates on closure to ground
Remote	RJ-45 Ethernet

Environmental

Power Supply	100 - 240 VAC, 50/60Hz, Auto
Power Dissipation	25 Watts Max
Height	1 U, 1.75 inches (4.44 cm)
Length	19 inches (48.3 cm)
Depth	16 inches (40.4 cm)
Weight	6.5 lbs (3 kg)

All specifications subject to change without notice.

White Paper

Video Time Reduction Workflow Comparison

Findings from Study: 85% Reduction in Labor Using the Time Tailor For Audio/Video Time Reduction vs. Digital Editing Systems

Introduction

Prime Image's Time Tailor technology has been used by content owners, editors and broadcasters for over 15 years to automate time reduction and advertising spot management. There are several methods in the US industry today that are scrutinized and approved by producers and editors for content time reduction – Time Tailor and Final Cut Pro (Apple Inc.). Prime Image conducted an independent study to evaluate and assess the labor and required assets to time reduce HD content using the Time Tailor 3000 and Final Cut Pro. The study was performed by an editor at Visual Data Media Services in Burbank, CA. The objective of this comparison is to quantify man-hours and define required technology assets to time reduce programming content for broadcast. The scope of this effort was limited to the following:

All content used in this comparison is HD (720p//1080i) with embedded audio and close captions (Syndication)

- Format one new 30 sec commercial spot required for broadcast
- Location of commercial spot in program is identical between tools, allowing for 10 min of program content for real-time reduction
- Programming content went through final quality control to verify no artifacts or other anomalies were introduced during time reduction and editing
- Technology assets were pre-defined and verified prior to conducting the study (Video Server, VTR, etc), acquiring assets and hardware set-up time were not included in the findings

The editor defined a workflow for both tools and documented his findings and execution time. Results from each study, including workflow steps, labor hours and technology requirements are captured below.

Time Tailor Overview

Prime Image's Time Tailor series is a patented, proprietary technology that is used for frame accurate time reduction of HD or SD video program content without using compression.

The Time Tailor is the only solution that provides a fast, high quality, low cost method of content time reduction with 15 years of proven results on movies, sitcoms, syndicated programs, and live broadcasts.

Time reduction occurs in real-time without pre-recording, pre-processing or video compression, using a process that is undetectable to viewers. This process maintains the synchronization of the audio, video, and captions, and more importantly preserves the original creative intent of the program.

The Time Tailor is part of an automated system that allows the customer to control the time reduction of specific program segments while leaving other segments, including advertising spots, unchanged.

The amount of additional time created and the duration over which it is created is fully programmable and controlled using the front panel of the Time Tailor, or a third party edit controller or play-out automation system, e.g., Editware's Fastrack Edit Controller or Aveco's Astra automation system.

Broadcasters, cable and satellite providers, post production, and other commercial program distributors can edit program and segment times to increase advertising revenue by creating or managing advertising space without compromising the integrity of the original program content.

Workflow Comparison: Time Tailor vs. Non Linear Editing Systems

The following is a workflow comparison between the Time Tailor 3000 and Final Cut Pro or other digital editing software solutions such as Avid.

Task: Time reduce a 30:00 HD TV closed captioned show for syndication

Total man hours invested: 6 hours and 50 minutes

- 1: 10:00 Project set-up / configure system
- 2: 30:00 Digitize show into system
- 3: 60:00 Conform show, format new commercial break
- 4: 30:00 Create and render motion effect
- 5: 45:00 Output to tape / file
- 6: 3:00:00 Reformat closed caption files:
- 7: 45:00 Pre read captions back onto new master

Machinery / personnel required:

- One Editor
- One Closed caption resource
- One Tape operator
- One Edit system
- One Playback/record VTR

Time Tailor 3000 with Fastrack Controller

Real time processing with closed caption retention:

Total man hours invested: 60 minutes

- 1: 5:00 Project set up time
- 2: 20:00 Programming/formatting time
- 3: 35:00 Output to tape / file for broadcast

Machinery / personnel required

- One Editor
- One Fastrack Editing system
- One Time Machine
- One Playback
- Two Record VTR or File Server with SDI interface

Quality of Deliverables

With Time Tailor's proprietary time reduction algorithms, the resulting delivery master is free of artifacts such as image interpolation, artifacting of titles and graphics.

Jerky pans, tilts and zooms from camera moves are also a thing of the past with the Time Tailors patented frame blending technology and micro editing. Audio tracks are free from the annoying speed trigger bumps and artifacting in the audio signal.

Time reduced content is preserved and fully endorsed by producers and editors within the industry.

Benefits of the Prime Image Time Tailor

- Labor savings: 85% savings of total labor hours
- Operating savings: Eliminate Final Cut Pro license fees, Mac computers and other digital editing expenses
- Increase revenue: Significant ROI in month one
- Superior quality, speed and dependability – all in real time
- Maximize your bottom line with the Time Tailor time reduction solution