Tachyon™ LIVE

TRANSFORMATION IN TRANSIT

The Gold Standard for frame rate/resolution/color conversions is now available for live, IP streaming.

Tachyon LIVE

Frame rate, resolution, scan type, and color conversions:are a critical requirements for international distribution of live video signals. The quality of these conversions is paramount, particularly for coverage of high-profile sporting events. Until recently, high quality, live conversions required dedicated hardware connected to specialized video transmission infrastructure.

Tachyon LIVE is a disruptive technology that resides within our IPx LIVE transcoder. Tachyon LIVE enables high-quality frame rate, resolution, and color space conversions to take place in nearly any compute configuration. Providing the same best-in-class motion-compensated frame rate adjustments, de-interlacing, and color space conversions found in our file-based Tachyon, Tachyon-LIVE has instantly set the standard for live IP streaming standards conversion.

IPx LIVE

IPx LIVE is Cinnafilm's live-stream transcoding solution that provides a flexible platform for Tachyon LIVE to operate on.

IPx is a CPU-based, real-time IP transcoder that can be quickly spun up in virtual environments, can be deployed on on-premises compute systems, and is incorporated into solutions like swXtch.io's cloudSwXtch and NVIDIA's Holoscan.

Flexibility is in IPx LIVE's DNA. Broadcasters can deploy on-premises as a robust, reliable engine or in the cloud for the ultimate in scalability and convenience. All that is needed is a fast network connection and IPx LIVE can be leveraged to unify multi-format feeds into a single standard - from anywhere on the globe.

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Tachyon™ LIVE

Tachyon LIVE Features

- Frame rate conversion: phase correlation-based motion compensation render engine, 6th gen
- Frame synthesis: ability to synthesize unlimited, new and clean temporal frames to preserve natural motion
- Advanced deinterlacing: two-stage conversion that eliminates nearly 100% of aliasing in SD content and extracts every possible detail from interlaced HD sources
- Subtitle and bug aware motion compensation to prevent artifacts on static overlays
- Scaling: interlace-aware advanced unlimited resolution interchange between SD and 4K.
- Scene-by-scene optimization: fully automated conversion for best quality playout end-to-end
- Intelligent sharpening
- Output speeds of real-time or faster (UHD 50/60) with a single Nvidia GPU

IPx LIVE Features

- Software (Linux) only implementation. No specialized hardware required.
- NMOS Session Control (SMPTE 2110)
- Live IP Protocol Conversion
  - 2110 (JPEG XS, Uncompressed)
  - SRT (H.264, HEVC, not switchable)
  - NDI (Switchable)
  - Transport Stream (H.264/HEVC)
  - TR07 (JPEG XS, not very switchable)
- Implementable on any on-premises or cloud-base (AWS, Azure, Google, Oracle, Alibaba, etc.) infrastructure.

Specifications

Supported conversions

- Frame Rate: convert any frame rates between 23.976 and 60 FPS
- Resolution: SD to UHD/4K
- Scan Type: Interlaced to progressive, progressive to interlaced
- Color Space: 601/709/2020
- Transfer Functions: 501/709/2020/PQ, HLG, User specified LUT

Compute Requirements & Interfaces

- CPU: 16+ cores (depending on workflow)
- GPU: NVIDIA Pascal series or newer
- OS: Windows or Linux

- REST & JASON RPC configuration and monitoring APIs