Teleste Optimo

High-density professional transcoder

The Teleste Optimo is a carrier-class, high-density transcoder for Cable TV, broadcast IPTV and OTT applications, which provides leading video quality and unmatched bandwidth efficiency combined with an unlimited output capacity and scalability.

More streams. Best quality. Choose both.

The Teleste Optimo provides a compact carrier-class solution for multi-screen video transcoding plus Internet and mobile video streaming. It is a unified platform for a wide array of advanced video processing applications and it transcodes from any input resolution to any output resolution while maintaining the precise ratio of quality to bit rate. This is all done with unparalleled efficiency and service reliability.

Amazing experience on every screen

The consumption of TV services is increasing and rapidly spreading across a variety of connected, video-enabled consumer platforms, such as smartphones, tablet computers, PC's, gaming consoles, connected TVs and more. A digital lifestyle increases the need to access entertainment and news in broadcast-quality; this cannot be compromised. The novel ways to access TV and video services set new requirements for a service provider.

The Teleste Optimo, which supports for any type of resolution video transcoding and codec audio transcoding, fits the bill by offering users the highest quality experience available. Adaptive streaming guarantees that viewers will enjoy uncompromised video quality, even in cases involving sudden changes in the network throughput. Uniquely, all the resolutions required for the multi-screen service are available at the same time from a single platform. It gives operators unprecedented amounts of scalability, flexibility and reliability and it is future-proofed to provide advanced video services for current and next-generation consumer devices.

No compromises in quality or quantity

Most consumers today expect a high degree of choice and quality in video. Pay TV providers have long offered extensive channel line-ups; in recent years, they have added high-definition (HD) programming to their linear and on-demand offerings. Large TV screens at home and smaller mobile screens are becoming increasingly common and setting new requirements for video quality.

Quality and quantity may seem contradictory in terms of network capacity, but the limits can be extended. The Teleste Optimo also reduces random signals and preserve and enhance important visual details.

The unified platform does it all

Density and multi-functionality in headend equipment often equals efficiency and cost savings. The advantage of low power consumption is multiplied by reduced cooling needs and is reflected in an increased product lifetime and a decreased risk of faults. Not to mention, it offers savings in rack space and cabling and allows for easier maintenance. All of this benefits the service provider.

The Teleste Optimo is a single unified platform for a wide array of advanced video processing applications. Rate-clamping, multi-codec transcoding, real-time and off-line file processing, multi-rate, multi-resolution, multi-screen stream adaptation, IP aggregation and processing, and other software applications can all be loaded onto the same unified hardware infrastructure. And because the platform is pure IP/Linux, it is unparalleled in its configuration flexibility and simplified system maintenance.

Easy to operate, yet provides full access to details

There are various parameters for adjusting the operation and fine-tuning the functionalities of professional equipment. Often, this involves a trade-off between usability and access to details. A simple user interface may lack the possibility for making detail-level adjustments, while a user interface that presents all the details can be complex and require high-level technical expertise on the part of the operating personnel.

The Teleste Optimo strives to combine first-class usability and detailed adjustments. The user interface has intuitive parameters with default profiles that moderate the need for technical expertise. However, an advanced operator will have the option to bypass the default values and fine-tune the details as he pleases. The entire solution can be managed centrally as one solution entity, or else the management can be handled via the web-user interfaces of individual devices.

Flexibility for your benefit

Varying needs demand different solutions. Saving bandwidth or downscaling HD content to SD require efficient transcoding, whereas OTT and multi-screen services demand fragmenting and streaming. Depending on the needs of the user, systems attempt to cover both transcoding and OTT or just transcoding. Furthermore, it is not uncommon that some system components exist already –and no-one needs duplicates.

From a system point-of-view, the Teleste Optimo offers unparalleled flexibility because the product's architecture allows for separate transcoding and OTT servers. The transcoding server can be complemented with the OTT server when multi-screen delivery is needed. This enables the Teleste Optimo to fit the needs of individual IPTV and cable TV operator in a cost-effective manner; it can also be integrated with any content delivery network (CDN) already having existing streaming servers.
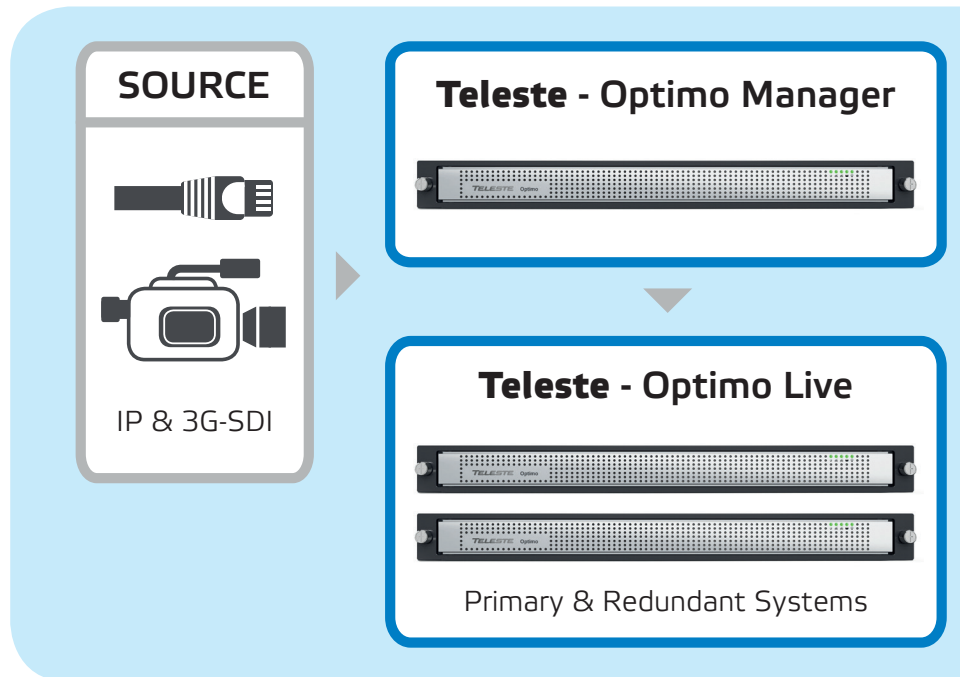
The best of hardware and software

When it comes to video processing, hardware-based solutions are usually first class in terms of efficiency and powerfulness, but they lack flexibility. They are optimal when harnessed to perform tightly defined operations, which makes them prefect for specialised tasks. Software-based solutions are, in contrast to hardware-based solutions, flexible and can be adapted quickly to suit varying demands, but they cannot reach the same level of performance as hardware – not in a competitive manner anyway.
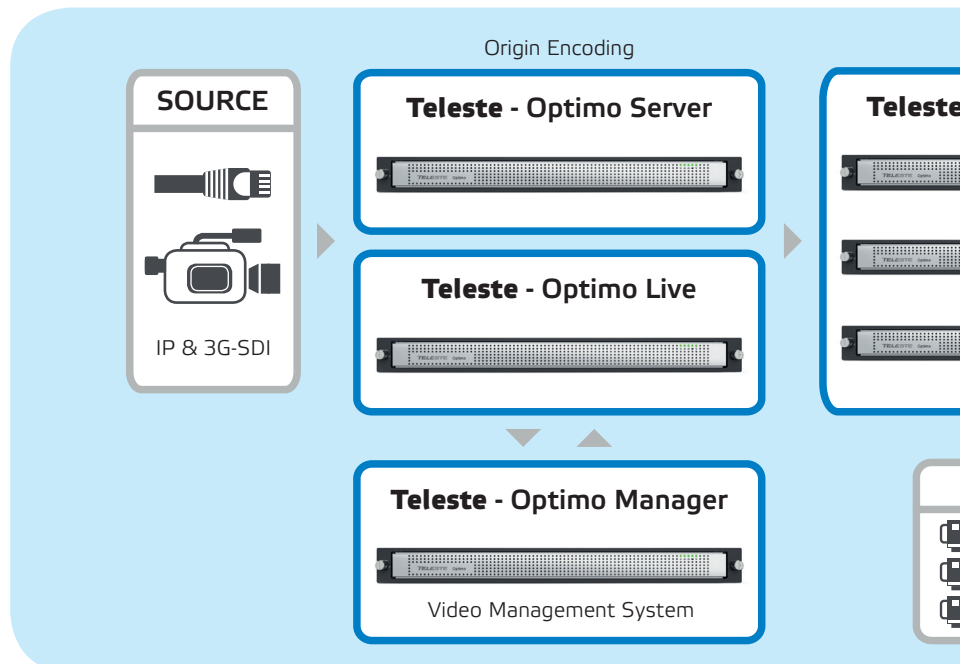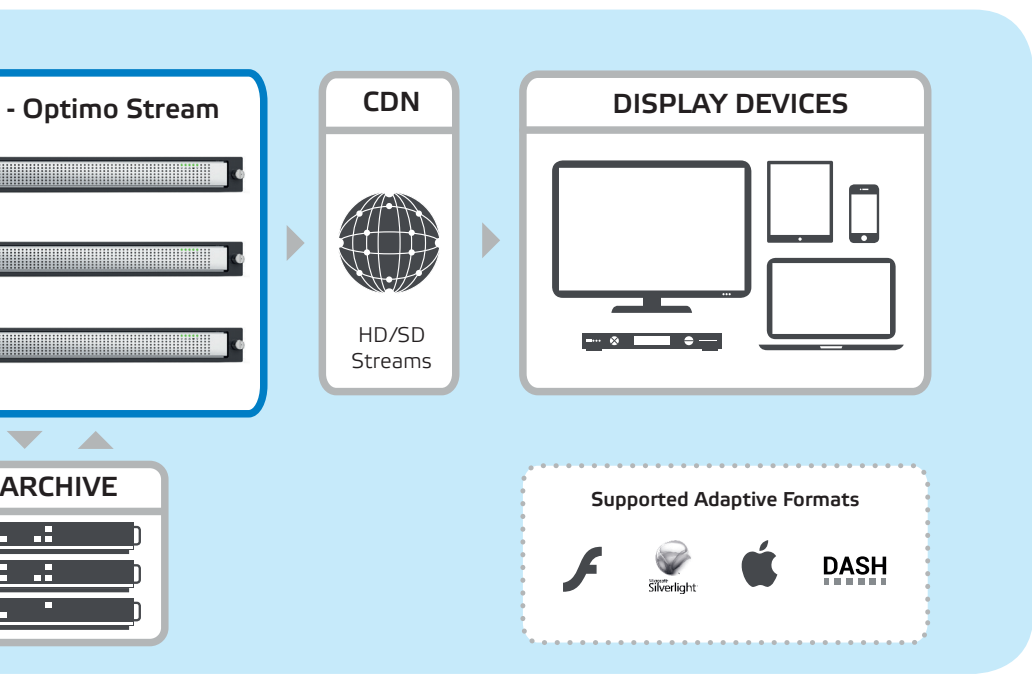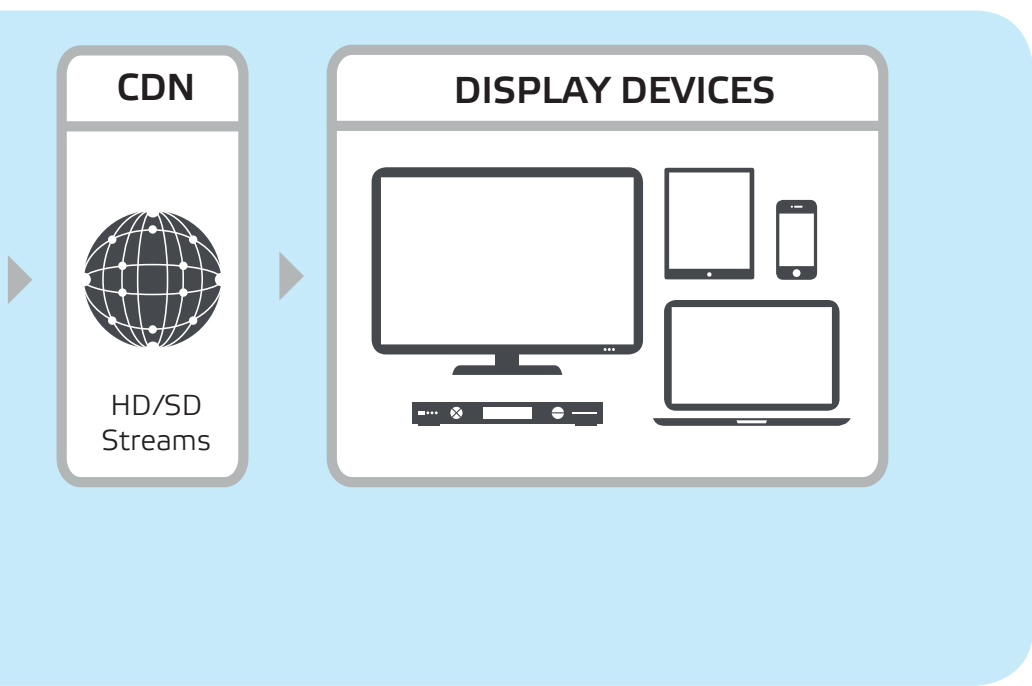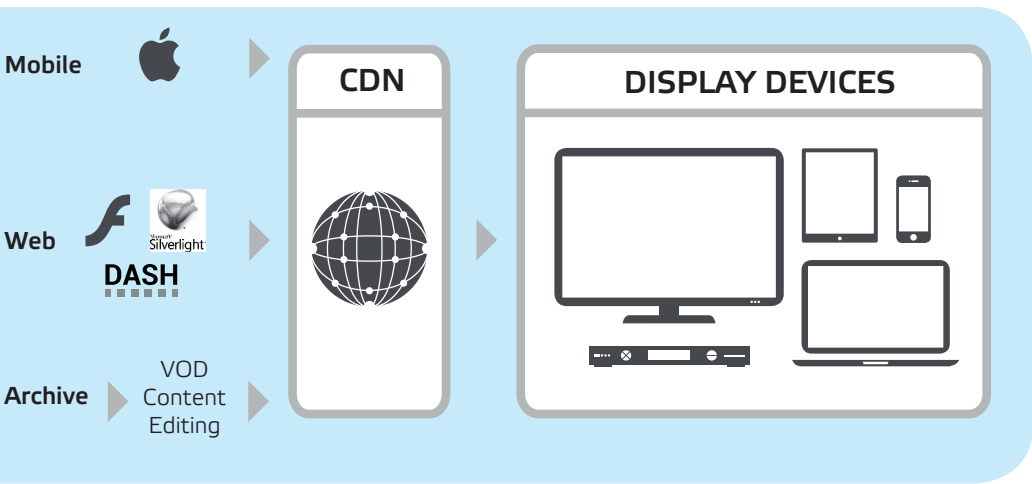
Teleste Optimo Live

SOURCE

IP & 3G-SDI

Teleste - Optimo Live

300 kbps
600 kbps

300 kbps
450 kbps
600 kbps
900 kbps
1.2 mbps
2.0 mbps
3.0 mbps

600 kbps
1.2 mbps
2.0 mbps
5.0 mbps

Teleste Optimo Manager

SOURCE

IP & 3G-SDI

Teleste - Optimo Manager

Teleste - Optimo Live

Primary & Redundant Systems

Teleste Optimo Stream

Origin Encoding

SOURCE

IP & 3G-SDI

Teleste - Optimo Server

Teleste - Optimo Live

Teleste

Teleste - Optimo Manager

Video Management System

Mobile

Web

DASH

Archive VOD Content Editing

CDN

DISPLAY DEVICES

CDN

HD/SD Streams

DISPLAY DEVICES

- Optimo Stream

ARCHIVE

CDN

HD/SD Streams

DISPLAY DEVICES

Supported Adaptive Formats

Silverlight

DASH

Until now, service providers have been limited to choosing between hardware- or software-based solutions. This has now changed, because the Teleste Optimo brings together the best of both approaches, thereby forming a unique solution offering. Operations requiring a high-processing capacity – like real-time transcoding – are performed by hardware, while software performs less heavy operations. The Teleste Optimo delivers high performance and flexibility and can be quickly and easily upgraded to support future capabilities and requirements.

Be proactive with quality assurance

Signals received at the video headend can be corrupted in their transmission from the broadcaster and/or programmer. These errors can appear as a discoloration of a macroblock, as a "tear" in the video frame or as stuttering due to lost frames. These quality issues can greatly affect a subscriber's service experience and should be proactively addressed and corrected before they reach the subscriber.

HARDWARE

DENSITY
PROCESSING POWER
VIDEO QUALITY

SOFTWARE

OPTIMO

NEW FORMATS
FAST TIME TO MARKET
MULTI-SCREEN FORMATS
ADAPTIVE STREAMING

Teleste Optimo combines the best of hardware and software.

Technical specifications

Video processing

Encoding and transcoding	MPEG-2 High and Main Profile MPEG-4 AVC High, Main and Baseline Profile H.265 / HEVC IDR alignment across unlimited profiles Multiple output profiles per input video CBR, VBR, and Capped VBR, CQ Frame rate reduction
Image processing deblocking	Motion adaptive interlacing Look ahead rate control Anti-alias scaling Noice reduction Bilateral filtering Scene change detection (automatic I-frame insertion) Aspect ratio and frame rate conversion

Audio processing

Encoding, transcoding	MPEG-1L2 AC-3 EAC-3 AAC HE-AAC
Audio level	Manual adjustment Automatic loudness management
Capacity	Up to 16 audio programs per video program

Data services

	Caption transcoding with multiple formats Caption burn-in DPI (SCTE-35) Logo insertion

Management

Graphical UI	Embedded WEBUI Management system for multiserver management
SNMP	SNMPV2c
High availability	N+M chassis redundancy group Input tream redundancy
API	Restful API

Chassis (1RU server)

Rack size	1 RU rack-mountable server chassis
Dimensions	WxHxD 437 x 43 x 777 mm, 22 kg
Power supply	100-240 VAC Dual swappable power module Max 750W in full 1RU transcoder
Redundancy	N+M chassis Dual power supply
Network interfaces	2 x Gigabit Ethernet ports Optional additional 4x Gigabit Ethernet ports Optional additional 2x 10 Gigabit Ethernet ports
Regulatory compliance	Electromagnetic emissions: FCC class A, EN 55022 class A, EN 61000-3-2/-3-3, CISPR 22 class A Electromagnetic immunity: EN 55024/CISPR 24, (EN61000-4-8, EN 61000-4-11) Safety: CSA/EN/IEC/UL 60950-1 compliant, UL or CSA listed (USA and Canada), CE marking (Europe)

Transports

Inputs from IP network	MPEG2-TS/UDP/IP RTP inputs IGMP v3 SSM Supports MPTS and SPTS, CBR or VBR Input stream redundancy (primary & secondary)
SDI inputs	Max 4x SDI (SMPTE259M) in 1RU chassis Max 4x HD-SDI (SMPTE344M, SMPTE292M, SMPTE424M) in 1RU chassis
Outputs to IP network	MPEG2-TS/UDP/IP SPTS Duplicate streaming (primary & secondary)

Environmental

Operating temperature	10 ºC to 35 ºC
Storage temperature	-40 ºC to 60 ºC
Operating relative humidity	8 % to 90 % non-condensing
Storage relative humidity	5 % to 95 % non-condensing
Storage shock	10 ms duration, 20G, square wave, 1 shock/side

Adaptive streaming

Roles	Segmenter
HTTP streaming	HLS, HSS, HDS, RTMP MPEG-DASH
File transfer protocols	FTP, WEBDAV