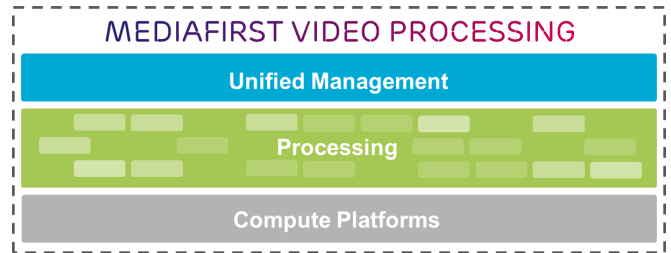




MEDIAFIRST VIDEO PROCESSING ENCODING LIVE



HIGH QUALITY ENCODING FOR ANY SCREEN

MediaFirst Video Processing Encoding Live brings together 25 years of video compression experience to deliver the highest quality, any-screen software applications for live video encoding and transcoding. Ericsson's continued investment and focus on the latest compression technologies ensures that the Encoding Live capabilities will efficiently deliver the best picture quality over bandwidth in all encoding environments and networks.

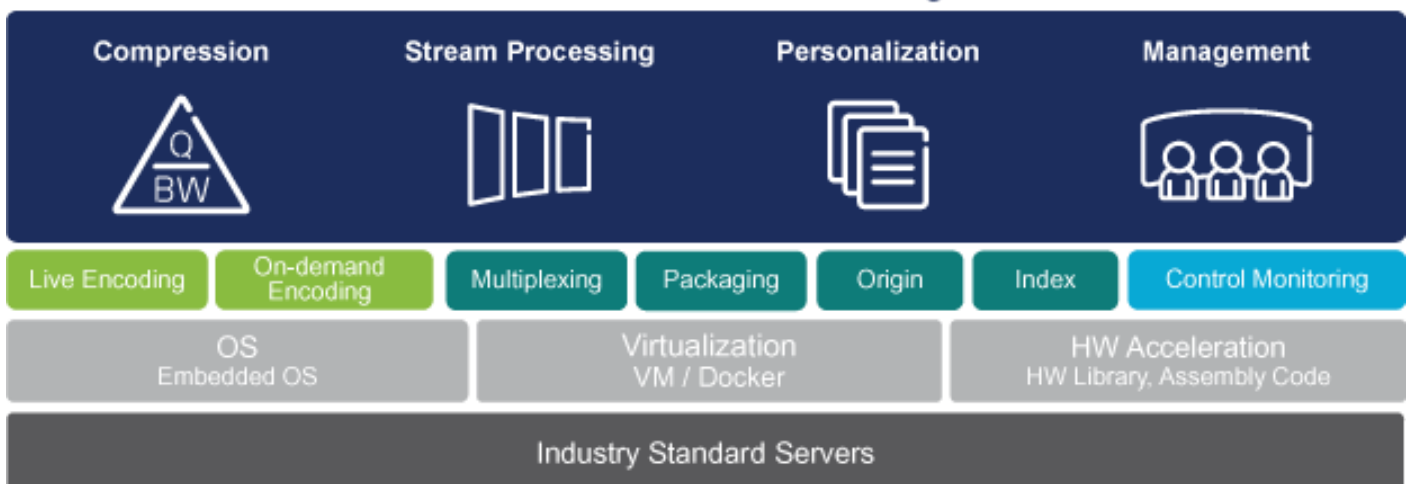
END-TO-END SOFTWARE SOLUTION WITH CENTRALIZED CONFIGURATION

MediaFirst Video Processing solution provides an end-to-end system designed to address key industry challenges. Ericsson allows operators to get the best from their IT infrastructure by providing a highly scalable and future-proof video processing solution.

- **Push your quality "Up!"** leveraging Encoding Live highest video quality and guaranteed performance across all codecs (MPEG-2, H.264 & HEVC).
- Faster time to market by leveraging **one solution to address all networks** and the software microservices-based architecture.
- **Reduce operational complexity** using the Management Controller as a single point of entry for all processing types.
- **Optimize OPEX and CAPEX** when migrating to full IP, and leverage the latest IT technologies (Containers & Orchestration) to reduce infrastructure costs.

Ericsson empowers operators all over the world to provide the most unique and immersive ways to distribute and consume video content.

MediaFirst Video Processing





PUSH YOUR VIDEO QUALITY 'UP' WITH ENCODING LIVE™

Encoding Live is an any-screen software solution for **high quality, live video encoding/transcoding** to any device. With its 'Up!' compression mode, Encoding Live **improves video quality, saves bandwidth**, and ensures **future-proof operations**.

Encoding Live offers an IP-centric and IT-oriented approach to video transcoding to all standards (MPEG-2, H.264 and HEVC), across all networks and devices, such as any real-time broadcast applications including: IPTV, cable, Satellite Direct To Home (DTH) and Internet TV.

SIMPLIFIED OPERATIONS

Access your headend from a **single, unified point**. The Management Controller is integrated with Encoding live to provide a centralized GUI.

Oversee your whole headend through this **service-driven centralized UI**: you can configure, **control and monitor** all your channels across all networks (DTH, cable, iTV). A REST API is also available for mass configuration.

Addressing all networks with a single software solution significantly improves efficiency and operations compared to architectures that call for separate headends.

Encoding Live is designed to run 24/7 with embedded **redundancy features and integrated N+M failover**. MediaFirst Video Processing facilitates its integration in IT datacenter with its **switchless** failover.

The fully automated deployment workflow will help you shorten your time to market and envision more complex solutions like automated disaster recovery.

RECLAIM THE FULL POTENTIAL OF YOUR INFRASTRUCTURE

Thanks to our **microservices-based architecture**, Encoding Live is **container and orchestration ready**.

MediaFirst Video Processing solution is **designed for cloud use** (private or public) and for **future-proof operations**. Service configuration and hardware are completely decoupled to provide all the flexibility you can expect from your video headend.

The flexible software architecture of Encoding Live allows for simple software upgrades to guarantee continuous quality and functionality improvements.

Leveraging these cutting edge IT technologies ensures safe software roll out and improves management with simplified upgrades for your whole headend. This IT-centric approach is designed to significantly reduce operational costs.

VIRTUALIZED AND STANDARD SERVER DEPLOYMENTS

Encoding Live can adapt to multiple deployment contexts such as:

- **Ericsson optimized** appliance-based **platforms**
- software on **COTS or blade servers**
- virtual instances in the **cloud**

This versatility gives your team more flexibility to manage operations and Media Processing deployment.

The screenshot displays the MediaFirst Video Processing web interface. The top navigation bar includes the Ericsson logo, a hamburger menu, the title 'MEDIAFIRST VIDEO PROCESSING', and user controls (admin, settings, help). Below this is a breadcrumb trail: Home / Services / TF1 / Statistics. The left sidebar contains navigation links: Home, Services, Servers, and Templates. The main content area has tabs for 'Media info', 'Input monitoring', and 'Output'. Under 'Media info', there's a section for 'Selected program' showing details for 'Running on standalone from 239.83.83.103:1234' and 'Program Number 100'. A table lists video and audio parameters:

Video		Codec	Bitrate (bps)	Resolution	Standard	Aspect ratio	Video quality
PID 1602	mpeg2video	17,945,280	1280x720	720p59.94	16:9	6.5	

Audio		Codec	Bitrate (bps)	Sampling (kHz)	Language	Channel mode	Left audio (dB)	Right audio (dB)
PID 1604	ac3	384,000	48	eng	5.1	-18	-20	

Below the table, there's a section for 'Other programs' from the same source. A small video thumbnail is visible on the right side of the table.

MediaFirst Video Processing Encoding Live

Use Case	Multiscreen Server Platform	IPTV, Cable TV, DTH/DTT Server Platform
Input		
Baseband Input	Support for 3G/HD/SD-SDI	
Compressed Input	<p>Type: IP (IGMPv3-based Redundancy and dual multicast redundancy); Dual source redundancy (active/active & active/passive modes); Pro-MPEG FEC support</p> <p>Monitoring: ETR 290, Packet loss statistics</p> <p>Protocol: MPEG-2 TS (MPTS & SPTS) over IP input</p> <p>Codec: MPEG-2, H.264, HEVC – MPEG-1 LII, Dolby Digital (AC-3), Dolby Digital Plus (E-AC3), AAC, HEAAC v1 and v2</p>	
Pre-Processing		
Aspect Ratio	WSS, AFD, Video index	
Metadata and VBI	SCTE 104 ⁽¹⁾ ; SCTE-35; IA 608/708 Closed Caption; SCTE-20; DVB Teletext; DVB-VBI; SCTE 27 ⁽¹⁾ ; OP47, SMPTE 2031; VITC	
Image Settings	Brightness, Contrast, Saturation, Hue, Gamma; Temperature	
Enhancement Filters	<p>Video: De-interlacing, Cropping, Letter boxing, Stretching, SD and HD Cross-scaling; 3:2 Pull down; MCTF⁽¹⁾, Deblocking filter⁽¹⁾, Denoising filter⁽¹⁾, Cross Talk filter⁽¹⁾, Smart Sharpening⁽¹⁾; Diamond filter⁽¹⁾;</p> <p>Audio: Automatic loudness control (A/85), Audio gain adjustment, Mute</p>	
Image Overlay	Image insertion on input loss	
Video Encoding		
	Encoding service synchronization	
Video Codec	HEVC Main 10, HEVC Main Profile, H.264 Baseline/Main/High profile, H.263 profile 0; MPEG-4 Part 2 Simple profile, VC 1 Simple/Main/Adv.	
Rate Control	CBR, Capped VBR	
Data Rate	From 10 kbps to 30 Mbps ⁽²⁾	
Resolutions	<p>Progressive: from QCIF to 1080p, up to 60 fps</p> <p>Interlaced: 480i, 576i, 720i and 1080i</p>	
Multi-stream Output	Common encoding and Adaptive Bit Rate (ABR)	
Audio Encoding		
Audio Channels per Service	Up to 8 stereo pairs	
Audio Encoding	MPEG-4/MPEG-2 AAC, HE-AAC v1 and v2, AMR-NB, AMR-WB, Windows Media Audio/Audio Pro, Transcode to Dolby Digital Plus (DD+)	
Pass-Through	MPEG 1 LII, AC-3, Dolby Digital Plus (E-AC3) 5.1-ch or stereo ⁽⁵⁾	
Data Rate	From 4.75 kbps to 320 kbps (<i>from 64 to 1024 kbps for DD+</i>)	

(1) Option (2) Depends on codec and resolution (3) TS outputs only (4) For more details contact Ericsson



MediaFirst Video Processing Encoding Live

Use Case	Multiscreen Server Platform	IPTV, Cable TV, DTH/DTT Server Platform
Monitoring & Control		
Control Interface	Up to 2 IP ports, monitoring and control ports (primary and spare)	
Control and Systems Protocols	REST, HTTP, NTP, FTP, IGMP v2/v3, SNMP v2	
Scalability	Automated node redundancy with MediaFirst Video Processing Management	
Post Processing		
Metadata	Thumbnail generation for Adaptive TS output, Subtitle pass-through Subtitles pass-through and translation: EIA 608/708 Closed Caption, SCTE-20, DVB Teletext, DVB Subtitles, SCTE-27 Ad insertion: EBIF pass-through, SCTE-35 pass-through, insertion, validation using ESAM-based interface and conversion AIT passthrough for HbbTV VITC Timecode: available in all formats Nielsen: Watermark extraction for multi-screen devices	
Output		
Output Type	Redundant IP outputs	
Output Format	Adaptive TS (ALD, EBP, IDR or RAP-based signalling), SDT generation	
Compatible Deployment Models		
Software Only	Guaranteed performance on HP BladeSystem and Cisco UPS blades ⁽⁴⁾	

(1) Option (2) Depends on codec and resolution (3) TS outputs only (4) For more details contact Ericsson