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LIVE CHANNEL PLAYOUT

Streamline the Launch of New Channels and Video Services

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INTRODUCTION

Today, the line between broadcasters, content programmers, and pay TV operators is blurring as new services such as over-the-top (OTT) video delivery are expanding, consumer expectations are growing, and the need for professional channel creation and content delivery are increasing. One way for broadcasters and content owners to stay competitive in this transitioning marketplace is to launch new channels or linear video services quickly and easily while maintaining the viewing experience to which users have become accustomed.

Video operators seeking to start up a new channel are faced with the construction of complex workflows that require specialized hardware components, which can be difficult and expensive to upgrade. In addition, some operators need to be able to turn services on and off that only broadcast periodically in order to monetize specialized channels. Still others may seek to expand revenue opportunities with experimental services, such as the delivery of 4K content. A major concern is how to fill a 24/7 linear UHD channel with both live and on-demand content since live 4K content production is in an emergent state. A new 4K service offering is a significant competitive advantage if operators can launch prior to having all of their assets and workflows in 4K.

An innovative approach is available that brings video encoding, dynamic content control and motion graphic overlay into a single solution for broadcasters, service providers and content owners with lowered costs, additional revenue from new services, and content monetization through regionalized service creation.

THE CHALLENGE

Launching new broadcast channels and linear video services can be both costly and complex. This is true for content programmers, pay TV operators, enterprises with internal channels, governments, local news agencies, and even event venues producing video content for fans to watch from VIP suites, or as part of their TV sports packages.

First, video production and display technology is in transition. It is difficult to support the most cutting-edge display standards such as ultra-high definition (UHD) given that existing infrastructure is built for more ubiquitous standard definition (SD) and high definition (HD) content. 4K content production is a relatively new and expensive proposition, and often, video providers launching new channels have a need to switch between content with different resolutions, frame rates, and formats, which can disrupt viewer experience with changes in clarity and image size.

Second, creating a new channel has traditionally required an investment in specialized hardware that includes an encoder, a graphics engine, a playout system, and automation or a scheduler. In addition to being expensive, this hardware can be difficult to integrate into existing video infrastructure, and cannot be easily updated to support new formats and resolutions.

And third, video operators expect to have capabilities to ensure their broadcast channels meet professional standards as well as regulations. These include the ability to brand a channel, promote upcoming programming, and comply with federally-mandated regulations to provide emergency alerts, if necessary, by using graphic overlays.

THE SOLUTION

To alleviate the cost and complexity of keeping pace with continual transformation in the video industry, many content programmers and pay TV operators are opting to implement software-based solutions in building out video delivery infrastructure. Hardware-based video solutions are generally not upgradable and often require complete replacement to realize improvement or change. Conversely, software can be easily updated to accommodate advances in technology. Price-performance ratios of off-the-shelf hardware directly benefit software solutions, allowing for much greater levels of scalability and infrastructure flexibility as compared to specialized hardware.

The Elemental Live Channel Playout Solution essentially collapses and simplifies a video workflow by adding functionality to Elemental Live video processing software to offer an integrated encoder and playout system. Elemental Live software eases the path to linear 24/7 UHD channel creation by reducing total cost of ownership, the complexity of video operations when launching new channels or services, and keeping everything in a single, simple software-based product.

Two essential features of the Elemental Live Channel Playout Solution are dynamic content control and motion graphic overlay. These are part of a series of features to support video operators launching new channels and services. Because these features reside in software, this solution can be deployed on appliances, run on virtual machines or even created within cloud services.

DYNAMIC CONTENT CONTROL

Dynamic Content Control enables seamless and scheduled source switching between any combination of live (IP or SDI) and file-based video inputs, regardless of resolution or frame rate. This makes it possible to fill a live 24-hour UHD broadcast channel even if some content originates as HD. Viewers experience smooth transitions as programming switches from live video to pre-recorded video to advertisements and back.

Dynamic content control can be configured directly within the Elemental Live user interface. It can also be controlled using REST APIs, which provide added features and functionality by integrating with an existing automation or scheduling system.

MOTION GRAPHIC OVERLAY

Elemental Live software can overlay full frame rate motion graphics on video outputs. These overlays can be used to create channel logos, promotional animations, video squeeze back effects, advertisements, news tickers and more to enhance the broadcast experience.

Formats currently supported for motion graphics include a PNG image sequence and Flash SWF. The motion graphic overlay feature allows for the insertion of one animation at a time, starting and ending at specified times. However, multiple effects can be achieved simply by changing the animation as it is running – dynamically in the case of SWF.

Typical use cases for PNG sequences would be an animated corporate logo in a corner of the screen or a simple “Coming Soon” promotion for upcoming programming.

Typical use cases for SWF would be the display of live news or weather updates along the side of the screen, sourced from an RSS feed for example, or display of a scoreboard ticker or crawl. SWF can also

be programmed to manipulate the primary video, resizing and shifting for effects such as squeeze back. With SWF, content can be dynamically refreshed, and the SWF can be updated via the Elemental REST API. Because the functionality for graphic overlay can be controlled and manipulated using APIs, this enables a “design once, use everywhere” video processing workflow, where the same motion graphic can be used for a wide variety of services.

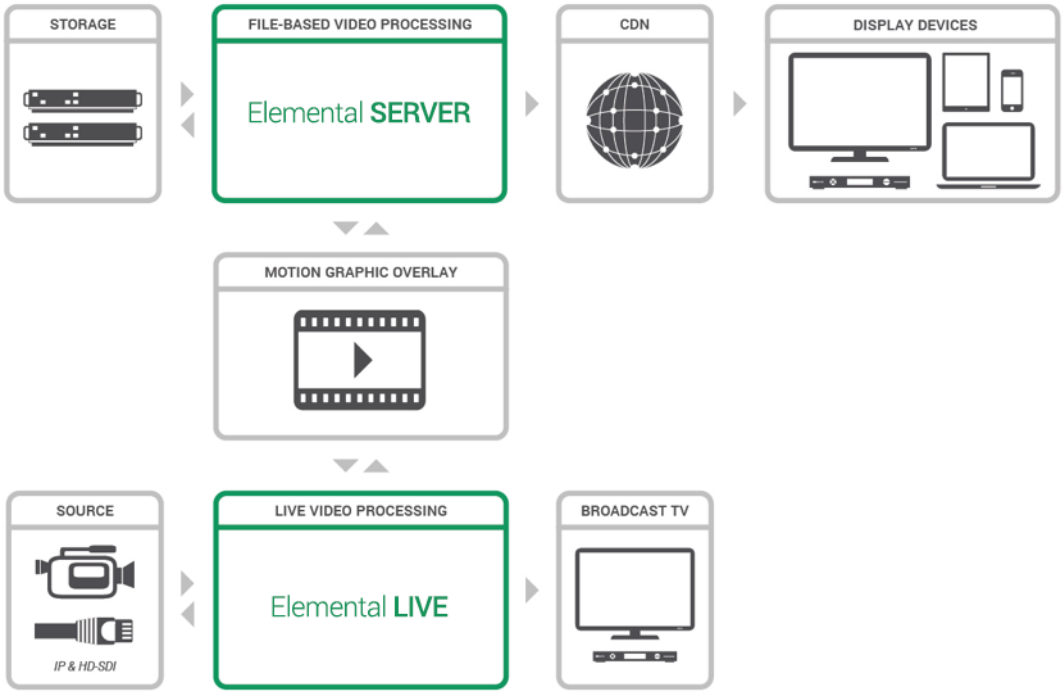

Figure 1 – Motion graphic overlay functionality is available with live linear and file-based video processing

When animations aren’t necessary, static images can also be inserted at a specified time and duration. Up to eight static overlays can be added independently of one another, with fade-in and fade out capability. Opacity can also be controlled in order to have semi-transparent image effects.

Motion or static graphic overlays can be formatted for 4K output, which means the video can be professional grade, using the highest resolution graphics to match the video quality.

Figure 2 – Motion graphic overlay can be used to create channel logos, promotional animations, squeeze back effects, advertisements, news tickers and more

SUMMARY

The process of launching a professional-grade UHD broadcast channel with a software-based solution gives operators an opportunity to expand video offerings quickly and easily using on-premises equipment, virtual machine instances, or the cloud. The Channel Playout Solution now available with Elemental Live provides the capabilities broadcasters have come to expect, the agility to take advantage of the latest industry innovations, and a high-quality viewing experience for their customers, all while keeping operational costs to a minimum.