

## **Statement of Interest: Web & TV Convergence – The Fourth W3C Web and TV Workshop**

**Title:** Live Linear Streaming – The TV Everywhere Accelerator for Pay TV Providers  
**Author:** Andrew Horne, Solutions Architect, Elemental ([www.elementaltechnologies.com](http://www.elementaltechnologies.com))

Consumers of video have the power today. By and large, they decide when, where, and how they watch their videos. Pay TV providers are accelerating their IP-based video services to compete more effectively with rapidly emerging over-the-top TV (OTT) providers. But there's an Achilles' Heel in many operators' TV Everywhere game plans: few or no live channels.

Live streamed linear feeds of sports, news and entertainment content are becoming a competitive necessity for pay TV operators and for enabling key new services, such as HbbTV (hybrid broadcast-broadband TV). Recent studies show that consumers – even cord cutters and cord nevers – put a premium on having access to the live content they love. In a report issued in 2013, The Diffusion Group (TDG) reported that 64% of online viewers surveyed would be willing to pay higher monthly service fees to get content from their pay TV operators on devices beyond the TV set.

To keep a competitive edge, pay TV operators need an offensive strategy that enables them to easily ready their technology infrastructures for live linear streaming at the lowest possible total cost of ownership. Rapidly shifting consumer demand and a highly competitive market also drive the need for the rapid evolution of systems that are deployed in an increasingly volatile technology environment brought out by today's bring-your-own-device culture.

### **Fixed Function, Hardware-based Infrastructures Don't Work**

While many of the infrastructural underpinnings and video DNA are in place for successful live-linear streaming service roll outs, there are challenges -- most notably with the finite nature of traditional, fixed hardware-based infrastructure that has defined the video processing industry for decades.

These dedicated infrastructures from incumbent video processing suppliers won't be able to withstand the onslaught of innovation germinating from increasing consumer demand to get video on *their terms*. Nor will they be able to handle the forward-thinking technological innovations driven by leading suppliers, research universities, and industrial consortiums seeking to constantly up the ante for consumers of branded content. Innovations in audio processing, color depth, content protection and tracking, not to mention video encoding

innovations will no longer what for generational swap outs of hardware. The industry moves too quickly now to wait.

And, unfortunately, hardware-based approaches lack the agility and elasticity to get the job done.

### **A New Weapon for Pay TV Providers: Software**

Pay TV providers enriching their current services with premium live-linear streaming services can strengthen their competitive position and speed time to market by deploying software-defined video processing (SDVP) architectures as the core of their next-generation infrastructures.

SDVP utilizes the most powerful general purpose programmable processors – both on the ground or in the cloud – to meet the changing needs of live-linear pay TV services. An SDVP-enabled architecture is built to meet the flexibility, scalability and reliability needed to deploy live-linear pay TV services while extending the useful life of the infrastructure as the industry evolves. What is used to process MPEG-2 video today can migrate seamlessly to H.264 or HEVC/H.265 in the future. What is used to trial 8-bit 4K processing might evolve to 10- or 12-bit processing at real deployment. The possibilities are only constrained by the lines of code in the software -- and not by chip designs within traditional hardware systems.

Implicitly future-proofed, SDVP overcomes issues around legacy hardware encoders “running out of roadmap”. This lets operators quickly and flexibly create content in new formats and resolutions needed for streaming to a rapidly expanding universe of consumer devices.

And because SDVP architecture is built upon general processors that can be virtualized and reside in public cloud infrastructures, integrated cloud platforms can ramp resources up and down depending on demand, preventing overinvestment in infrastructure. Increased virtualization enabled by end-to-end SDVP architectures also has the potential to reduce the headaches of storage capacity, cost, and bandwidth when launching Catch-up and Start-over TV functions. Key monetization capabilities, such as just-in-time (JIT) packaging, ad insertion/replacement and expanded CDN, are seamlessly integrated within the ecosystem -- all in software.

In many ways, SDVP is the promise of a limitless roadmap for the Pay TV operator. By committing to an SDVP architecture as the basis for their next generation video processing infrastructure, Pay TV providers can more confidently pursue live linear streaming offers,

enhance them with innovative new functionality such as catch-up TV and start-over TV, and explore new delivery models such as HbbTV. And accomplish it all while lowering financial cost of entry into new projects, markets, and applications.

The days of swapping out video processing systems every three years to “reboot” to the current state-of-the art are history. Consumers no longer wait. Neither should your innovation.

|