

Broadcast and TV Channel Executives Explore Strategies for Managing HDR Complexity and Future Proofing TV Experiences

The rapid evolution of HDR has created opportunities for broadcasters and TV channel executives to significantly improve the quality of experience provided to consumers.



Silver Spring, Maryland Dec 16, 2021 (IssueWire.com) - Broadcasters and TV Channel executives worldwide have been exploring ways to manage the complex issues associated with delivering high-dynamic-range (HDR) experiences across the wide variety of content they present to their viewers. While the rapid evolution of HDR has created opportunities to significantly improve the quality of experience provided to consumers, the industry must determine an effective way to absorb these new technologies and innovations as they become available without completely disrupting operations.

“Over the past few years, we have seen the emergence of new delivery formats—like ultra-high-definition (4K/UHD) and HDR—which provide better audio and video to viewers,” explains Guillaume Arthuis, founder and chief executive officer at BBright.

Integrating these new technologies, however, has not been without challenges. Specifically, the industry wants to ensure that a market is in place for the new enhanced formats while making sure that new services do not lead to an explosion of operational complexity that elevates costs and threatens profitability.

“New innovations are constantly introduced, so offering options and flexibility in how the industry can accept and manage content at both input and delivery is essential. Broadcasters and TV channels want to make sure that they are addressing today’s opportunities and looking ahead to ensure that they can cover the next ten years of requirements in terms of formats,” says Guy Ducos at Advanced HDR by Technicolor.

Harmonizing different types of input content and then converting it into the selected output format—which may be HDR today, but tomorrow may be another format—will be a key differentiator. In addition, all of this must be done in a high-quality manner in real-time.

Broadcast Community’s Understanding and Ability to Manage Complexity

The complexity associated with managing multiple generations of technology is not a new concept for the broadcast community.

“Ten years ago, we saw the migration from standard to high definition. What is important to keep in mind is that, for many years, broadcasters had to produce, manage, maintain and deliver two versions of their delivery signals—SD and HD. This was both complicated and expensive,” says Arthuis.

The migration to HDR threatens to create a similar level of complexity. For HDR deployment, a broadcaster needs to ensure that they have two versions of the content—SDR and HDR, or UHD alternative for high-quality delivery. In addition, they also need to be able to provide HD in SDR. This can lead to the need to maintain different variations of their signal that are supported by independent workflows.

Advanced HDR by Technicolor Streamlines Support of SDR and HDR Delivery

Advanced HDR by Technicolor, known as SL-HDR 1 in the Advanced Television Systems Committee (ATSC) standards community, enables broadcasters and TV channels to distribute video over a single stream in both SDR BT.709 content and HDR-BT.2020 content. This streamlines the process.

A broadcaster using Advanced HDR by Technicolor can distribute the SL-HDR 1 standard with an SDR BT.709 base signal and allow everyone with a legacy TV or screen to enjoy high-quality SDR BT.709 images.

“Metadata in the same stream makes it possible to deliver HDR-BT.2020. If the receiving device is certified with Advanced HDR by Technicolor, the content is automatically upconverted and optimized for the device’s capabilities so that viewers receive the highest quality experience possible. This means that broadcasters do not need to allocate additional frequencies and resources to support the delivery of both SDR and HDR formats,” says Ducos.

In addition, artificial intelligence and machine learning have a prominent role in managing the complexity of supporting legacy content and the diversity of devices.

Unlike SD-to-HD conversions, SDR-to-HDR is not just about managing different numbers of pixels but also a matter of aesthetic choices. AI is necessary for dynamically analyzing each individual frame of the SDR (or HDR) input content to generate (or derive) the best possible HDR (or SDR) quality that can be achieved by optimizing the video—on a frame-by-frame basis. This function is performed while respecting the content producer’s aesthetic intent.

“Advanced HDR by Technicolor also allows video engineers and colorists to tune the solution upfront, at the production level, to match their aesthetic preferences precisely. Once that engineer or colorist has decided their aesthetic preferences, AI can then follow those aesthetic choices and deliver native HDR—and the best possible derived SDR—and broadcast it to viewers in a single stream,” points out Ducos.

BBright Solutions Utilize Backwards Compatibility to Enhance Broadcasting and TV Channel Management

Meanwhile, BBright brings to market a new generation of playout solutions that provide the highest level of integration to simplify the management of complex workflows.

“Our broadcast automation systems and programming applications enable broadcasters and TV channels to unify content output and harmonize the HDR and SDR content. There eliminates the need to manage the various formats that are being ingested manually,” says Arthuis.

As a result, broadcasters can integrate advertisements that use legacy 1080i SDR into their process and deliver native HDR content in an automated manner and generate two versions of their content—UHD HDR plus the HD SDR in a simultaneous fashion. The ability to tune content is also crucial in cases where it is not appropriate to convert certain content dynamically to HDR. These fine-tuning capabilities that BBright and Advanced HDR by Technicolor bring to market ensure all current, and future workflows are supported.

To listen to the full interview with Guy Ducos and Guillaume Arthuis visit:

<https://bit.ly/3m82i12>

To learn more about Advanced HDR by Technicolor visit:

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