



Remote Workflows and HDR in Sports: Not Just for the Big Leagues

BY SCOTT MATICS, SENIOR DIRECTOR OF PRODUCT MANAGEMENT, TELESTREAM

Long before the pandemic arrived, media organizations had been seeking new ways to reduce costs when broadcasting major sporting events. However, given the disruption caused by COVID-19, broadcasters and media companies are faced with the challenge of remote work and remote production on an everyday basis. With sports of all kinds making plans to start up again, likely with no fans and minimal production and postproduction staff on site, workflows must be adapted to this new environment. Leveraging the cloud with tie-ins to on-prem storage is one of the key elements to the solution. Traditionally, these events have required broadcasters to send millions of dollars of gear and operating staff to remote locations, sometimes halfway across the world. More recently, great strides have been made in the remote production and streaming of sporting events requiring a fraction of the staff and infrastructure previously considered essential.

media companies had to rely on costly satellite or fiber-based infrastructure while incurring additional costs by co-locating production teams and equipment at the event itself. Moving content to the cloud, while still being able to leverage on-premises storage, removes dependencies on specific locations—a boon to sports production and postproduction, especially in the midst of a global pandemic. “Remote” can now mean everyone and need not refer only to a remote production facility.

Starting with the FIFA World Cup in 2018, FOX Sports was able to use technology like IBM Aspera’s FASPStream and Telestream Vantage and Lightspeed Live Capture to deliver live, broadcast-quality video streams from their venue in Russia to the FOX Sports Los Angeles postproduction facility. With this solution, creative teams began working on live capture feeds delivered from the remote location while the event was taking place, without waiting for the entire file to first be written to disk and then transferred. Transcoding, packaging, editing, and other downstream workflows were able to start immediately, considerably shortening the production cycle and increasing the value of the produced content. Significantly, the L.A.-based editing team was able to edit growing files that were only 14 seconds behind the live event. Instead of the one-time capital expense of creating new facilities in Russia, along with a substantial movement of staff for the duration of the tournament, FOX Sports was able to invest in its existing facility and production staff, which will benefit all future events wherever they may be located.

A key part of any IP remote workflow is to deliver “edit-ready” content in the correct formats to the editors. Telestream’s Lightspeed Live Capture units, combined with Vantage transcoding and automated workflows, provided direct delivery of the required AVC Intra media to the Los Angeles production facility. This enabled the team to reduce the number of encode/decode steps experienced in



REAL-TIME REMOTE PRODUCTION FOR LIVE EVENTS

Real-time, remote production has long been the holy grail for broadcasters who produce live events. Until recently,



traditional workflows. By delivering an edit-ready format over IP direct into the editor storage infrastructure, editors could consume the live video almost instantaneously without any SDI infrastructure.

Additional new technologies have become available that further reduce the costs of sending low-latency media over unmanaged internet pathways. The SRT (Secure Reliable Transport) protocol also provides broadcasters with an alternative to costly satellite links, purpose-built fiber networks, or proprietary transport solutions. SRT Hub can help broadcasters and video service providers easily build reliable and secure live and file-based content routing workflows on-demand. Using SRT Hub, new live streaming and file-based workflows like this are no longer only reserved for large-scale projects like the FIFA World Cup or the Olympics. With Vantage Cloud Port from Telestream, Vantage workflows can be hosted in the cloud, and these workflows are still able to access on-premises storage unencumbered by IT restrictions because everything is “inside the firewall.”

SIMULTANEOUS SDR AND HDR POSTPRODUCTION WITHOUT BREAKING THE BANK

Sports and live events are lucrative markets and content owners and broadcasters want to offer UHD programming to differentiate themselves even though, for now, a majority of viewers still consume HD content via OTA and cable. Offering High Dynamic Range (HDR) and wide color gamut provides the biggest visual impact for viewers, but it presents new challenges for productions that wish to produce both HDR and Standard Dynamic Range (SDR) content simultaneously without a commensurate increase in staffing and resources.

Telestream’s [Lightspeed Live Capture](http://www.telestream.net/lightspeed-live) (www.telestream.net/lightspeed-live) and [Vantage](http://www.telestream.net/vantage) Media Processing Platform (www.telestream.net/vantage) have helped top-tier organizations successfully deliver these unique, mixed HDR/SDR workflows. By considerably reducing complexity, editing teams are able to work on both the SDR and HDR products during the editorial process simultaneously without significant impact. A great example is the how FOX Sports delivered HDR and SDR content for Super Bowl LIV.

For Super Bowl LIV, FOX Sports decided that the productions for the entire day would be done in HDR and produced in 1080p HD for traditional OTA, cable, and satellite viewing and upconverted to 4K for select streaming devices. The team standardized on HLG (Hybrid Log Gamma) because of its backwards compatibility and easy conversion to and from the Rec 709 (SDR) color space. Since the NLE systems

were editing in SDR color space and the source material was all shot in HDR, some form of color space conversion was required prior to the editing process. In addition, the output from the NLEs was in Rec 709, so conversion to HDR on the output side would also be needed.

The sheer scale of the operation required automated high-quality, high-volume transcoding and color conversion. Any historical or legacy SDR content needed to be converted to HDR to play out to air. Vantage utilized LUTs (Look Up Tables) to ensure the technical and artistic accuracy of the color space conversions. Vantage was a core component in making sure FOX Sports had all post-produced segments available in both SDR and HDR. It also ensured that archives exist in both formats for future use.

During the Super Bowl, many thousands of “tone mapping” transformations were performed by the Vantage system over the course of the event. The transparent nature of these conversions let the production staff focus on storytelling and not the underlying tech. In the four days leading up to game day, the postproduction team used numerous individual Vantage workflows, which performed thousands of postproduction jobs—a level of productivity that could not have happened without Vantage’s high-quality color space conversion and built-in workflow automation.

BATTLE TESTED REMOTE AND HDR WORKFLOWS

Using these same tested workflows, it’s now possible to enable more remote productions, saving considerable costs in both equipment and labor. At the same time, more sporting events can deliver state-of-the-art 4K HDR programming to OTT platforms, enabling a richer, more engaging experience for viewers without breaking the bank.

Get more information including how you can set creativity free and streamline your media operations—as part of your remote working and disaster recovery plans—at www.telestream.net/remoteworkforce. There’s even a USD 299.00 bundle to get you started.

ABOUT TELESTREAM

For over 20 years, Telestream® has been at the forefront of innovation in the digital video industry. The company develops products for media processing and workflow orchestration; live capture, streaming, production and video quality assurance; and video and audio test solutions that make it possible to reliably get video content to any audience regardless of how it is created, distributed or viewed. Telestream solutions are available on premises or in the cloud as well as in hybrid combinations. Telestream is privately held with corporate headquarters located in Nevada City, California and Westwood, Massachusetts.