


# Next Generation Video: New Tools for Live Production, Use, and Reuse

BY JAMES SNYDER



**T**elevision production has always been in a state of constant change. From the beginning of electronic imaging in the 1930s, progress has moved in fits and starts. Sometimes in great leaps (addition of color, stereo audio, move to HDTV), sometimes in small increments (better camera tubes, move to solid state imaging, flat panel displays), change brought better quality, better tools for production and distribution, and different revenue streams.

The industry is now in a period of major technological change. The switch to digital acquisition and production, along with the widespread adoption of TCP/IP-related switching and distribution connections, has enabled new methods of content consumption by consumers and is now working its way into the production

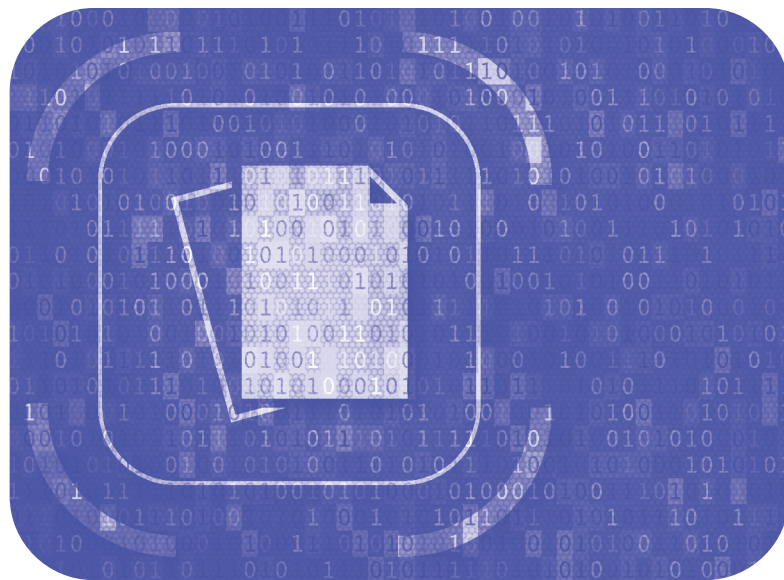
and distribution chains, resulting in improvements in quality, functionality, and the preservation of the resulting content libraries.

The adoption of the SMPTE 2110 standard in 2014 started the move of in-studio production first, then inter-facility production, and now wide-area production toolkits and features to TCP/IP signal pathways. Increased flexibility, more production at lower cost, improved quality, better metadata creation tools, better quality control, faster file-based workflows, and less latency in live production environments. 2110 started as a replacement for SDI within production studios. Now it has grown beyond the walls of individual facilities to provide high-quality production capabilities worldwide. But not every system can handle the throughputs required for end-to-end 2110 production. That doesn't mean tools aren't getting better, though.

The advent of higher quality IP-based production has led to the emergence of new tools for acquisition, transport from field to production centers, metadata creation and processing, increased quality in both acquisition and distribution, and new tools in file-based workflows to identify content that enhances searchability and future reuse.

In this issue of the *Journal*, we look at how digital, IP, and new toolkits can improve the various aspects of live and post-production. Metadata, which is quickly becoming a key tool in increasing the ability to generate increased engagement by end users, is moving to the center of the production and distribution systems. We look at how production venues and the switching systems used to create engaging content from the output of those venues no longer need to be physically tied together to work live and in harmony. Improved transmission quality using better codec tools allows image and

sound quality captured in the studio or the field to get to the switching center, which enables higher quality transmission to the end user of the final production output. High Dynamic Range (HDR) video is no longer limited to in-studio production: it can now be captured in the field live and maintained throughout the production chain. And finally, we explore how ATSC 3.0 is enabling higher-quality content with enhanced functionalities—beyond picture and audio—that are being implemented in a number of locations around the world.



METADATA, WHICH IS QUICKLY BECOMING A KEY TOOL IN INCREASING THE ABILITY TO **GENERATE INCREASED ENGAGEMENT BY END USERS**, IS MOVING TO THE CENTER OF THE PRODUCTION AND DISTRIBUTION SYSTEMS.

We are at an exciting time in both the creation of new content and the reuse of existing content libraries. Imagine what we will see next!

#### About the Author



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