

KCSM

CASE STUDY



KCSM Migrates to HD and Tapeless Production with Harmonic

Background

KCSM's television and radio stations, licensed to California's San Mateo County Community College District, made their broadcast debuts in 1964. Originally established as student broadcast training facilities, the stations today have professional staffs operating full-service public television and radio stations and continue to serve as learning laboratories for students enrolled in the College of San Mateo Broadcasting Arts Department.

KCSM TV is located in the San Francisco Bay Area, one of the country's largest DMAs, and broadcasts 24 hours a day to a coverage area that includes San Mateo, San Francisco, Santa Clara, Santa Cruz, Alameda, Contra Costa, Marin, Solano, Sonoma and Napa counties. KCSM TV also is carried on 60 cable systems in the Bay Area.

The Challenge

Among the top values to which KCSM is committed, in addition to being a leading public television broadcaster, is the exploration and use of new technology to enhance the lives of its constituents. With the goal of improving the services it offers viewers, KCSM planned to move its proven operational model into the era of digital television, HD and distributed media. In addition to boosting video quality from SD to HD, the upgrade was intended to eliminate costs associated with cumbersome tape-based workflows; streamline the production workflow through faster, easier media access; and establish an infrastructure capable of supporting the new distribution and acquisition formats of public broadcasting, local public television and the community college system.

In addition to providing a more stable, reliable and convenient solution for media ingest, storage and playout, the Harmonic platform has enabled KCSM to streamline its overall operation and significantly reduce the time and expense required to produce and take programming to air.

SOLUTION AT A GLANCE

KCSM deployed Harmonic infrastructure to support HD services, enable a file-based workflow, and streamline overall operations. Harmonic MediaGrid provides central nearline storage for playout and production. Harmonic MediaDeck system supports live production while the upgraded Spectrum server supports SD/HD playout and the Harmonic ProBrowse system allows fast, convenient access to content by more users. The newly enhanced Harmonic media storage and processing platform at KCSM has enabled a shift away from videotape-based operations and toward fully digital and HD-capable operations without the need to invest in a new server system.

Like most member-supported television broadcasters, KCSM is well aware of the need to do more with less. Thus, in order to meet all of its upgrade objectives cost-effectively, the station chose to build on its existing investment in file-based systems, expanding its Harmonic ingest and playout platform with added format support, I/O and storage capacity and processing power.

The Solution

KCSM had established server-based ingest and playout capabilities in 2004 with its installation of a Harmonic Spectrum™ media server system, and in 2009 the broadcaster upgraded those systems to HD and invested in additional Harmonic server and storage systems to create a completely tapeless HD-capable workflow from production through playout.

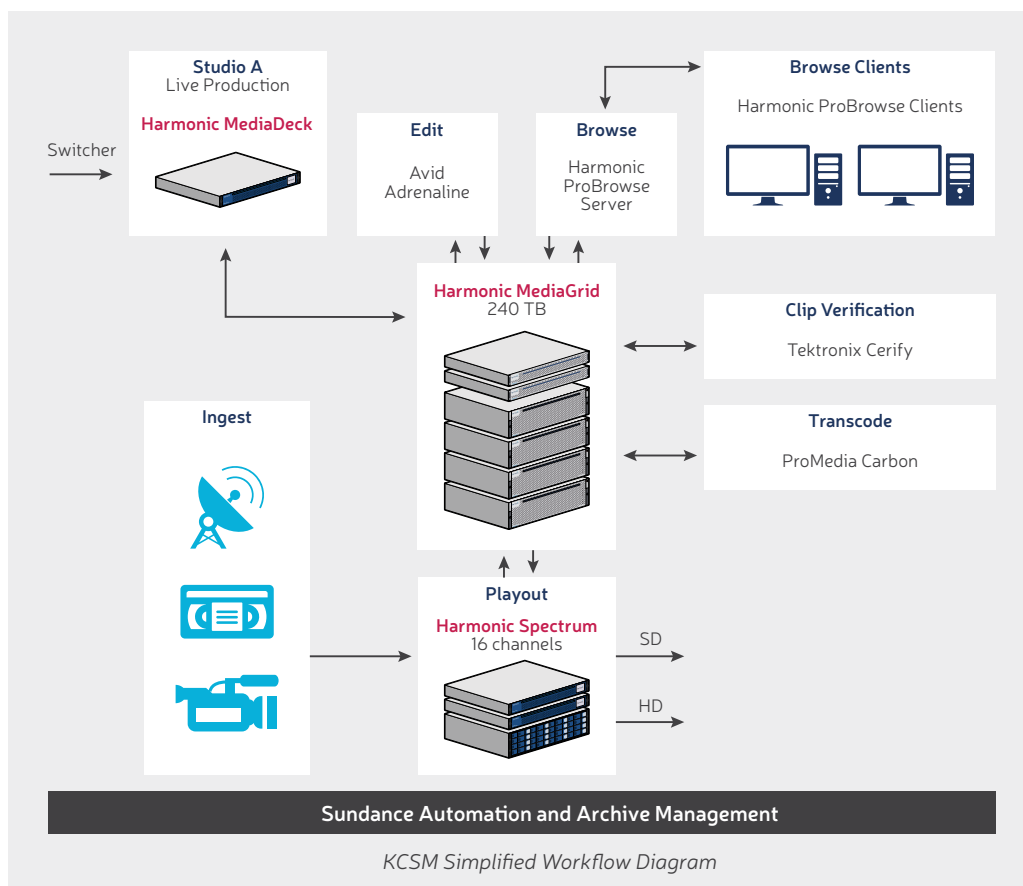
Within the Harmonic media storage and processing platform, the Harmonic Spectrum server system accommodates ingest and playout with eight HD/SD bidirectional channels and eight HD/SD playout channels, supported by automatic internal upconversion. Harmonic MediaGrid™ active storage system provides 240 TB of nearline storage, serving as a high-performance, high-availability media archive with a Sundance Archive Manager managing the movement of files between the Harmonic MediaGrid and Spectrum systems.

In upgrading its studio production capabilities, KCSM also purchased a new Harmonic MediaDeck™ system. Installed in the station's Studio A control room, which supports the station's original program production as well as external production clients, the MediaDeck server supports live production with four bidirectional channels and 3 TB of storage.

Harmonic ProBrowse system, equipped with two proxy generators, provides staff at KCSM with faster and more convenient access to media by making low-resolution versions of stored content available for desktop review throughout the station.

The Workflow

The Harmonic platform enables fast ingest and transfer of SD and HD media to storage, in turn reducing the time required for production staff to gain access to the content they need. Incoming feeds are ingested by the Spectrum media server and archived to the Harmonic MediaGrid active storage system, which makes a library of content readily available for editing on the station's Avid® Adrenaline™ nonlinear editor. The much-improved speed of KCSM's workflow also is enabled by Harmonic ProBrowse, which automatically creates proxy versions of ingested media and makes low-resolution versions of stored content available for viewing via browser-based interface at any desktop within the facility.



The integration of Tektronix® Cerify® with the Harmonic platform enables automated verification and checking of file-based content prior to editing or transmission. The Cerify platform is able to read and qualify video files from Harmonic Spectrum media servers, which fully support Cerify file access while simultaneously ingesting in real time, without transfer wait time or version control issues.

Media clips stored on Harmonic MediaGrid are readily accessible and retrievable after ingest, in comparison to videotape storage that required manual retrieval and loading of tape into a VTR each time a clip was needed. As KCSM brings new and legacy content onto the Harmonic MediaGrid system, the station uses a ProMedia™ Carbon transcoding engine to support a true “any in, any out” media workflow.

With support for all major broadcast media containers and codecs, as well as popular Web and mobile formats, the ProMedia Carbon and Harmonic MediaGrid together enable easy migration of KCSM's legacy video to current formats so that it may be archived securely and incorporated into future productions. Flexibility in handling media in different formats also equips KCSM to work more easily with content from partner broadcast companies and educational institutions within the community college system, and opens the door for media distribution to virtually any target outlet or platform.

During live production in Studio A, KCSM's MediaDeck server gives KCSM the benefit of tapeless video record and playback capability. With simultaneous SD and HD support and boasting the same performance and reliability of Harmonic Spectrum systems, the smaller MediaDeck server provides a flexible, cost-effective solution for KCSM's HD-capable studio environment.

Once edited, finished SD and HD program and promo content is stored to the Harmonic MediaGrid system. The station's Sundance automation system oversees the transfer of required content to the Spectrum server for playout. Automatic upconversion enables playout of multiformat content from the same timeline.

The Result

The newly enhanced Harmonic media storage and processing platform at KCSM has enabled a shift away from videotape-based operations and toward fully digital and HD-capable operations without the need to invest in a new server system. The Harmonic platform, delivered by systems integrator Advanced Systems Group, is enabling KCSM to digitize its existing videotape library; to acquire, store and broadcast both SD and HD video; and to access all of its video assets much faster and with much greater ease and convenience. In addition to providing a more stable, reliable and convenient solution for media ingest, storage and playout, the Harmonic platform has enabled KCSM to streamline its overall operation and significantly reduce the time and expense required to produce and take programming to air.

