

# Imagine Communications Selenio™ Powers Encoding for KCET's New File-Based Workflow

## Customer Profile

Founded in 1964, KCET is the largest independent public television station in the U.S., serving Southern and Central California. In addition to its far-reaching broadcast signal, KCET is carried on satellite systems and on nearly 150 cable systems in 11 counties. KCET recently merged with Link Media, an independent non-profit media company that operates the Link TV national satellite network and the LinkNews online international news portal, to form KCETLink, an independent public transmedia company. Programming from the new KCETLink will be available to 33 million households via DirecTV and Dish Network, and 5.6 million households through KCET.

## Business Challenge

In 2012, KCET sold its broadcast facility of 40-plus years and moved its entire operation, including ingest, playout and post production, from the original Sunset Boulevard location to new offices in Burbank, California. In this new space, the station had the opportunity to design a broadcast and media facility from scratch. In conjunction with systems integration and design firm The Systems Group, KCET decided to implement an XDCAM file-based workflow for the new station. A key goal was to realize superior bandwidth efficiency for over-the-air signal encoding, while reducing rack space requirements and eliminating auxiliary conversion gear. All equipment – routing, encoding, processing and conversion – needed to be able to communicate seamlessly within the same network.

## Technology Solution

The new infrastructure at KCET utilizes Imagine Communications signal processing and networking equipment as the glue of the overall facility. This equipment is housed in the central equipment room, yet impacts every part of the facility. The system includes a 1024x1024 Platinum router that features integrated frame synchronization and MAD1 capability for high-density audio

### Customer

- KCET – Los Angeles, California

### Industry

- Broadcast Television

### Challenge

- Realize bandwidth efficiency for OTA signal encoding & superior processing integration in new file-based workflow.

### Solution

- Selenio™ MCP3 media convergence platform, Platinum™ router, Platinum™ multiviewer, Selenio X85 and X50™ processors, Selenio 6800+™ modular platform, Magellan™ control panels

### Business Value

- **Space- and Cost-Savings**  
Key functionality, such as cross conversion, handled internally within Selenio frame, eliminating an additional box and expense.
- **Time Savings**  
Updates, such as an MPEG-4 license, easily implemented in-house. New updates automatically applied.
- **One-Stop-Shop Integration**  
Routing, encoding, processing and conversion operations communicate via same network.

“With Selenio, the bandwidth-efficiency improvements of the SD conversions have been noticeable, and viewers have provided positive feedback regarding the on-air signal quality.”

-Gordon Bell, senior VP of engineering, operations and IT at KCET

routing along with integrated Platinum SX Hybrid multiviewers, which provide multi-display image processing in several control rooms.

A core component of the new design is the Selenio MCP3 media convergence platform, which performs over-the-air signal encoding. Selenio cleanly encodes four over-the-air signals from the new facility – one HD and three SD – as well as direct-to-satellite and cable feeds.

KCET HD programming reaches Selenio in 1080i, yet KCET broadcasts in 720p to take advantage of additional sub-channels. Selenio comfortably handles the required 1080i-to-720p cross-conversion within its 3RU frame.

Selenio also provides statistical multiplexing for efficient bandwidth management. The HD signal, compressed in MPEG-2, varies between 10 and 12 MB/s, with SD channels encoded at approximately 2.5 MB/s including audio.

Selenio also encodes the direct-to-satellite and cable feeds for fiber delivery. This includes LINK TV, originated from the KCET facility and delivered to DirecTV and the DiSH Network in MPEG-4 compression. The Selenio platform handles both MPEG-2 for terrestrial and MPEG-4 within the same frame.

Selenio X85 and X50 1RU processors serve a variety of multitasking functions, including color correction in addition to up/down/aspect ratio conversion, particularly important for the insertion of remote feeds into live newscasts. KCET also uses the Selenio X85 for audio processing and AFD code insertion, required when downconverting HD signals for cable. A variety of Selenio 6800+ processing modules are used primarily for distribution, frame synchronization and embedding.

## Business Value

### Space- and Cost-Savings

With the Selenio platform, rack space requirements are reduced and auxiliary conversion equipment is no longer necessary. Key functionality, such as cross conversion, is handled internally within the frame, eliminating an additional box and expense. Selenio is also able to handle both MPEG-2 and MPEG-4 within the same compact frame.

### Time Savings, Simplified Setup/ Updates

Imagine Communications handled the initial Selenio system setup, and recent necessary updates, such as an MPEG-4 license, were easily implemented in-house. New updates are automatically applied, which saves time.

### One-Stop-Shop Integration

Working with a single infrastructure vendor offers significant benefit, as Imagine Communications routing, encoding, processing and conversion operations all “talk to each other” via the same network, and operators can control and monitor all components using Magellan control panels. bar for spectator engagement and enjoyment.

