



Convention Center Case Study:

Wide-area audio distribution & software-based control

The Q-SYS Ecosystem delivers networked audio and control to the McEnery Convention Center

In downtown San Jose, CA, the McEnery Convention Center is host to hundreds of events each year. From tech conferences and sporting events to Comic Con, concerts and beyond, it is the busiest event center in Silicon Valley. With a major renovation and expansion on the way, the convention center opted to make a significant upgrade to their networked AV infrastructure with the Q-SYS Ecosystem.

McENERY CONVENTION CENTER

San Jose, CA



Q-SYS has allowed us to deploy a capable AV&C solution that will enable client events for years to come.

Tim Foster, Director of Production at the McEnery Convention Center



Regardless of its scheduled event type, a typical convention center needs to offer wide-area audio distribution and zone paging throughout multiple large spaces. For this installation, the McEnery Convention Center required networked audio distribution and software-based control throughout three 55,000 ft² exhibit halls, a 60,000 ft² ballroom and 16 meeting rooms. To achieve this, the convention center team needed a forward-thinking and flexible networked AV&C solution that would enable their clients' events with minimal effort.



Centralized Processing

The solution needed to allow for centralized audio and control processing in one location for simpler management of AV and IT systems.



Streamlined Integration

The system needed to support clients that bring in their own specialized audio gear that needs to integrate seamlessly with the venue's AV system.



Simplified UI

The convention center needed a user control interface (UCI) solution that offered their clients full wireless control of the audio routing while maintaining ease of use.



When hosting an event in the global center for technology and innovation, client expectations are high – the AV&C system needs to work seamlessly, without causing unwanted interruptions during events. The McEnergy Convention Center was looking for a robust, networked audio and control solution that offered the capability and flexibility that would support a wide range of event types. Working alongside system integrator, Integrated Communication Systems (ICS), they deployed the Q-SYS Ecosystem to manage audio and control processing throughout the space.



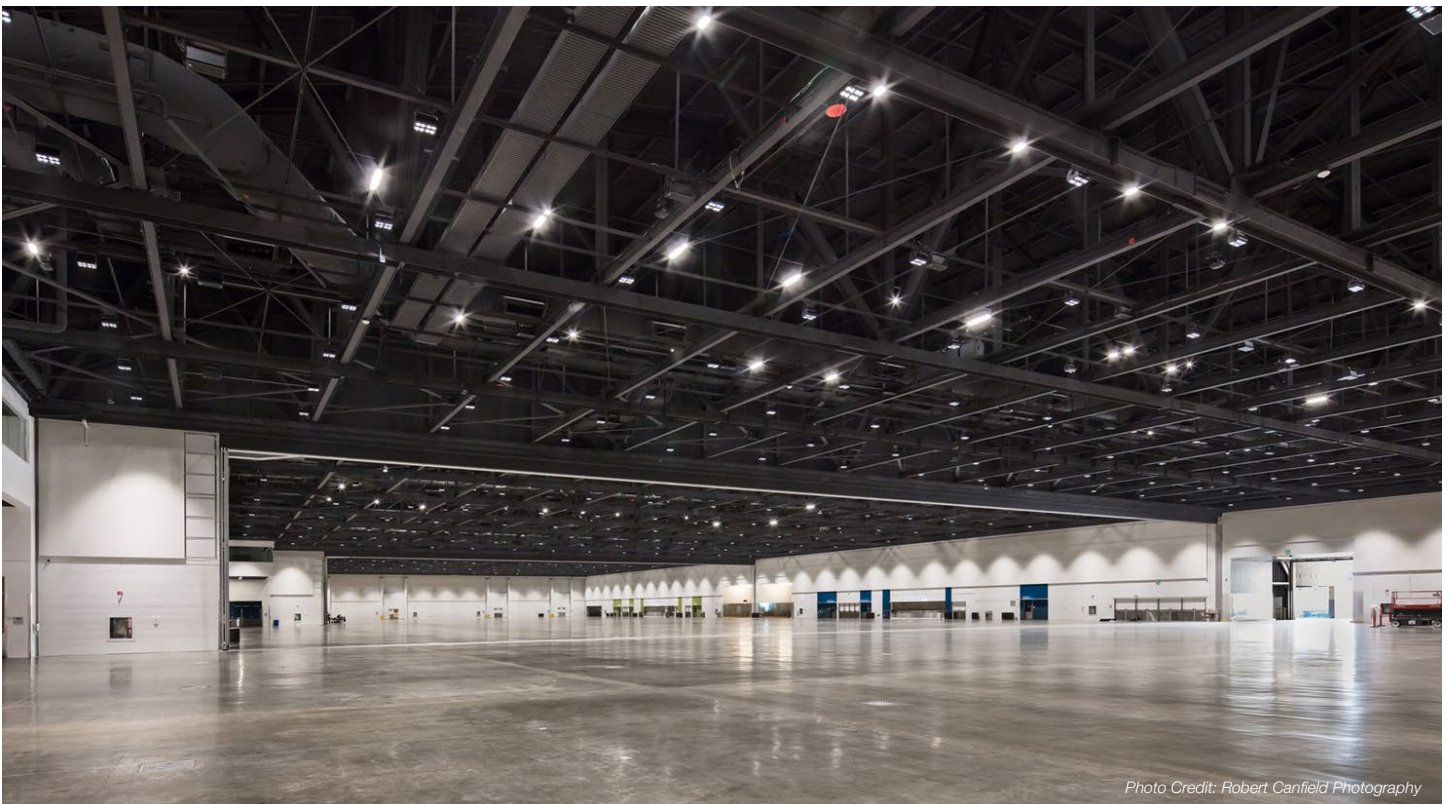
BUILT FOR I.T.

The primary audio and control processing is managed by a Q-SYS Enterprise Core 5200 processor. The Q-SYS Enterprise Core combines **standard off-the-shelf Dell server technology** with a purpose-built AV&C real-time operating system that allows for centralized processing of audio and control data in one location.

“The Q-SYS Enterprise Core lets us integrate AV&C with the IT infrastructure, centralizing building-wide IT services in a single location,” explains Mark Berlo, Project Manager at ICS. “This also simplifies management and support of the AV&C system by the convention center’s IT support staff.”

The team added a redundant Q-SYS Enterprise Core 5200 along with a redundant Q-LAN network for **full processing and network redundancy**. The transition between processors during a fault state is completely transparent to the end-user and ensures an uninterrupted audio and control environment at all times.

To support the meeting rooms, the Enterprise Core 5200 also offers up to **160 acoustic echo cancellation (AEC) processors and 64 VoIP instances** at the software-level – setting it apart from more cumbersome traditional card-based solutions.

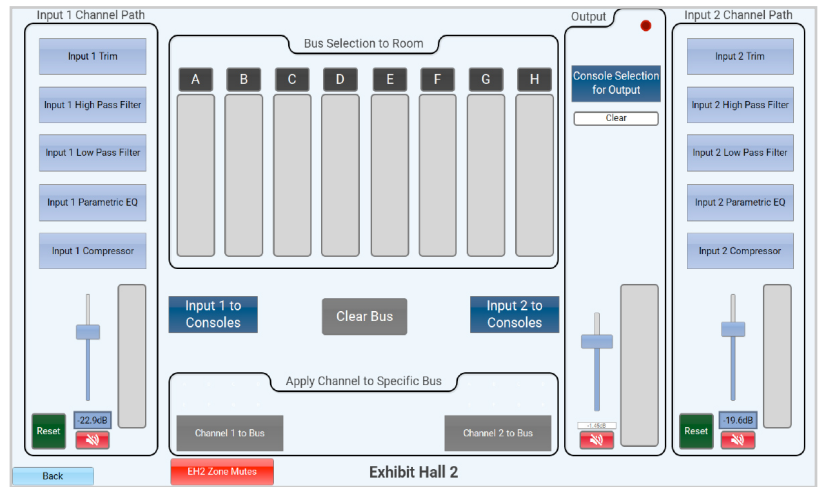




AUDIO UNDER CONTROL

A mixture of Q-SYS native CXD-Q Series network amplifiers and QSC CX Series analog amplifiers provide power for over 240 zones of audio throughout the facility.

The team at ICS utilized integrated software-based Q-SYS Control capabilities, rather than relying on dedicated control processing hardware, to build a robust user control interface that allows full routing, control and monitoring of audio throughout the convention center. The custom graphical user interface (GUI), accessible via iOS device, allows administrators the ability to route audio from any source to any loudspeaker in the facility, while also providing capabilities as simple as gain control or as complex as a full-featured virtual mixing console.



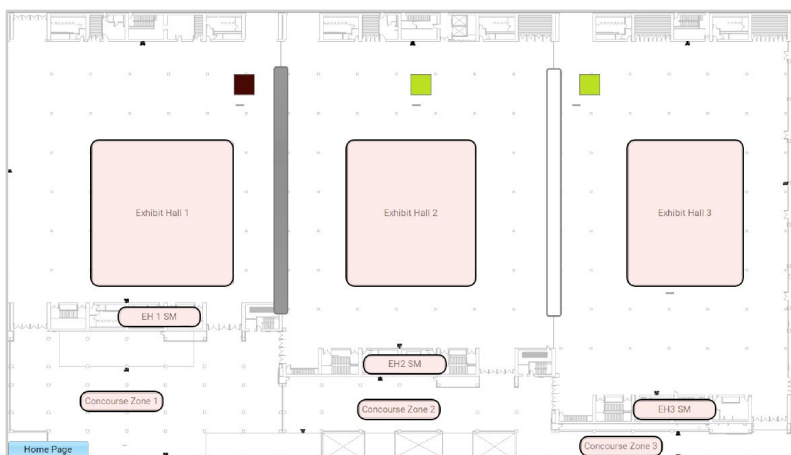
Virtual Mixing Console UCI

BYOD

Some clients choose to bring in their own mixing consoles when renting space in the convention center. Fortunately, Q-SYS allows for plug-and-play I/O integration from Dante™ audio consoles. Similarly, some clients also choose to bring in their own line arrays for use in the exhibit halls. To simplify the integration, the house loudspeaker system is setup to be fully time aligned with visiting client line arrays. This allows the line arrays to be utilized as the main audio system, while the installed house loudspeakers act as delays in the audio mix. This functionality is also controllable via the Q-SYS UCI.

Room Combining UCI

Q-SYS provides additional flexibility with its room combining capabilities. The team designed an intuitive room combining UCI that lets clients combine audio zones when airwalls between rooms are removed. This capability exists throughout the center's exhibit halls and meeting spaces.



Zone Paging UCI

The integrated paging router within Q-SYS allows clients to send a page to any zone in the facility, automatically ducking non-essential background music (BGM) content. It provides a truly customized experience for the needs of each unique event.





Photo Credit: Robert Canfield Photography

PREPARED FOR THE FUTURE

As the renovation continues in other parts of the facility, Q-SYS is well prepared to handle additional areas. Software-based control on the Q-SYS Ecosystem allows the team to expand the system endpoints without having to purchase additional control processing hardware, and the redundant Enterprise Core processors are more than capable of handling the additional processing needs.

"The next phase of this project will have us expanding the AV&C system into the remaining areas of the convention center," explains Mark Berlo. "Q-SYS allows us to continue adding audio endpoints without any additional programming. This greatly decreases deployment costs without compromising on functionality."

THE RIGHT CHOICE

The Q-SYS Ecosystem is a highly-capable AV&C solution that delivers wide-audio distribution, paging and software-based control, enabling a wide range of events at the McEnergy Convention Center.

"We were looking for a network audio and control solution that would exceed the industry standard in technology," said Tim Foster, Director of Production at the McEnergy Convention Center. "It was our goal to deliver a solution that offered the capabilities and flexibility for a wide range of event types, and Q-SYS truly delivers on those goals."



QSC EQUIPMENT LIST



Model	Pcs Used	Description	
Core 5200	2	Q-SYS Enterprise Core Realtime Q-SYS AV&C operating system Network I/O: 512 x 512	
Core 3100	2	Q-SYS Enterprise Core Software-based Audio, Video & Control processor Network I/O: 512 x 512	
Core 510i	4	Q-SYS Integrated Core Software-based Audio, Video & Control processor Network I/O: 256 x 256 8x audio I/O card slots	
CXD4.5Q	2	CXD-Q Series Four-channel Q-SYS network amplifier with 4 mic/line inputs, 2000 W/ch at 8 Ω	
CX404	56	CX Series Four-channel power amplifier with DataPort connector for Q-SYS networked control and monitoring 250 W/ch at 8 Ω	
I/O Frame	17	Q-SYS I/O network interface Four I/O card slots for up to 16 channels of I/O into the Q-SYS network	
I/O Frame 8s	12	Q-SYS I/O network interface Eight I/O card slots for up to 32 channels of I/O into the Q-SYS network	



About QSC

QSC is a globally recognized manufacturer of audio, video and control (AV&C) solutions for huddle rooms to stadiums—and everything in between. Our systems make it easy for your team to design and integrate flexible, scalable solutions and deliver the native IT integration and standards-based technology your customers expect.



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