

HYBRID PROCESSING PLUS WIDE-AREA PAGING AND SOFTWARE-BASED CONTROL

LEGOLAND®

LEGOLAND® Windsor Resort Builds for the Future with Q-SYS

📍 Berkshire, UK

[LEGOLAND®](#) Windsor theme park and resort in Berkshire, UK offers a fascinating world of adventure where children can fly through treetops escaping fearsome dragons, ride the thrilling rapids with a Viking fleet, and join LEGO® divers on a magical underwater adventure. Along with a mix of LEGO-themed rides, models and building workshops across twelve themed lands, it also features numerous shops, food and beverage outlets, a water park and two hotels across its 150-acre site. The theme park was in need of an AV system overhaul that would handle park-wide paging distribution along with audio, video, and control functionality for individual zones. Knowing that versatility and scalability were crucial, they chose the [Q-SYS Platform](#) to deliver on those needs across the park.



“**What we really love about Q-SYS, is that it enables us to think outside the box in how we use AV around the park.**”

Mark Boyce

Innovations Manager, LEGOLAND® Windsor Resort

Challenges

In a theme park, mission-critical applications such as wide-area paging demand uninterrupted communications between park staff and visitors, while each individual area of the park – whether a ride, shop, or café – has its own AV requirements to enable day-to-day operations. LEGOLAND® was looking to replace two separate systems (audio and paging) to offer a more streamlined AV experience.



Centralized Park-Wide AV Processing

The park needed to centralize some of the park-wide AV functionality like paging and background music.



Hybrid Audio and Control Processing

Standalone AV systems needed to handle the unique requirements of each zone in the park with the ability to integrate with the park-wide paging and background music.



Reduce Complexity

Park staff wanted a more centralized approach to control in order to make day-to-day system operation more efficient.



Solutions



The LEGOLAND team needed a vast improvement from its previous AV setup, which consisted of two separate systems, one for background music and one for paging. Working alongside integrator [JPSL](#), they chose the Q-SYS Platform to handle all network audio and control for the park, including wide-area paging distribution, which greatly improved day-to-day system operations.

Hybrid Processing

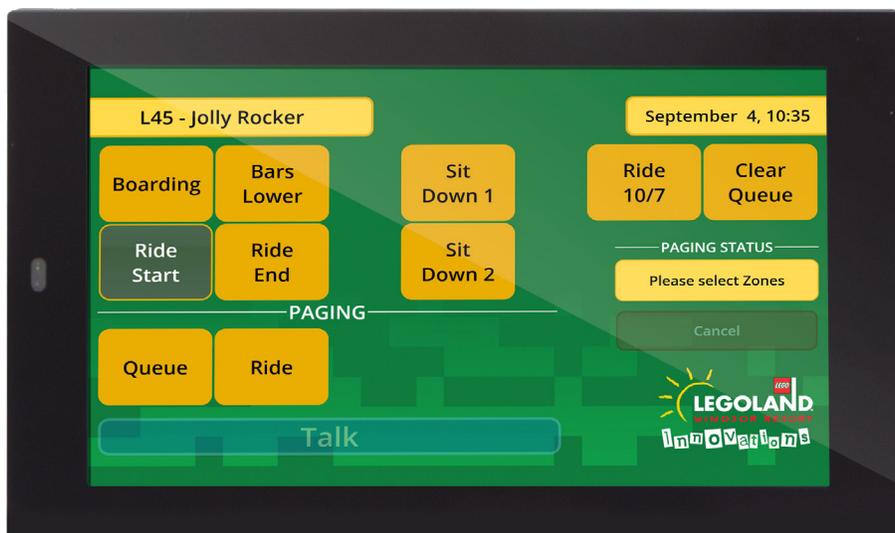
At any theme park, communication with guests is mission-critical, so the LEGOLAND team deployed a redundant setup of [Q-SYS Core 110f processors](#) to handle park-wide paging along with the background music for the retail shops, hotels and open areas, while each of the six different zones utilizes its own Q-SYS Core 110f for additional audio and control needs.

Distributed Audio and Control

By utilizing standalone AV systems in each zone, LEGOLAND can ensure plenty of processing headroom and network I/O to handle current and future AV needs, but most importantly, these systems can operate independently of the main AV system, so if a Core processor needs to go offline for any reason, such as a firmware update, it will never interrupt mission-critical communications.

Each zone has a different theme and includes rides, open spaces and/or hospitality, each with their own audio and control needs. A single Q-SYS Core 110f manages the audio and control in those zones. That may include local background music along with the ability to send pre-recorded messages or live pages to an area within the zone.

On the control side, [Q-SYS Touch Screen Controllers](#) provide ride operators with audio control and pre-recorded message activation. For example, on the Jolly Rocker ride, pressing "Ride Start" fades out the themed background music and starts the Jolly Rocker specific music, while "Ride End" plays an end-of-ride message before fading back into the themed background music. In the hotel, Q-SYS network touch screens give operators access to background music operation controls, such as playlist selections, while the retail shops use the Attero Tech by [Q-SYS C1 wall controllers](#) for simple audio adjustments.



Solutions

Core-to-Core Audio Streaming & Control

The integrator also needed a way to allow audio between its park-wide Core intended for wide area paging, and each of the distributed Q-SYS Cores. Core-to-Core Streaming enables that communication, allowing the park to utilize the main Cores for park-wide paging and LEGO®-themed background music. With this feature, park staff can send both live and pre-recorded notifications to visitors throughout the park. This also provides each of the distributed Cores with access to the global background music system, so that any of the zones can feature LEGO-themed music when necessary.

Similarly, they also use Core-to-Core Control Links and scheduling to allow the main Cores to trigger snapshots on the distributed Cores. Snapshots can cover a wide array of audio, video or control settings, and just a couple examples in action at the park include setting volume levels based on time of day and triggering pre-recorded messages that are stored on each of the distributed Core processors. One example of this is in the hotels, where guest service announcements play throughout the day. This idea can also help reduce the need for simple manual adjustments, and let the system operators focus on other tasks.

Audio Support

JPSL distributed a number of Q-SYS and [Attero Tech](#) by Q-SYS network I/O devices around the park to make it easy to integrate sound reinforcement for special events and guest performances. Audio sources or PA loudspeakers simply need to be connected to the I/O device and operators have full control of audio levels via Q-SYS network touch screen.

Rounding out the system are [Q-SYS CX-Q Series network amplifiers](#), powering the loudspeakers throughout the park. Because these amplifiers are designed specifically for Q-SYS, they offer both simple integration and advanced monitoring capabilities that the park's staff take full advantage of. JPSL created a special admin-level [user control interface \(UCI\)](#) for technicians to easily keep track of amplifier status and health so they can ensure systems are operating properly from a Q-SYS network touch screen or iPad.



Solutions

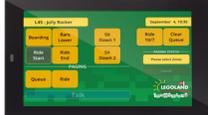
LEGOLAND® is now up and running with a fully integrated audio, video and control system that covers the entire park. With Q-SYS, they've not only solved the problems brought on by operating and supporting multiple systems (audio and paging), but they're now better prepared for future system growth.

"Our park is always evolving and growing, and it is important to have an AV solution that has the flexibility to scale along with it," explains Mark Boyce, Innovations Manager at LEGOLAND Windsor Resort. "The previous system hit its limits when the park expanded, and it just wasn't possible to continue to add functionality in a cost-effective manner. With Q-SYS, we've not only delivered well beyond what two systems were handling previously, but it has plenty of horsepower to continue growing alongside the park's needs well into the future.

Looking forward, the team at LEGOLAND is looking to utilize Q-SYS to host parades and other non-stationary events. "What we really love about Q-SYS, is that it enables us to think outside the box in how we use AV around the park. It's truly a great platform, and we look forward to bringing out the best in what LEGOLAND has to offer."



Q-SYS Equipment List

Model	Pcs Used	Description	Image
Q-SYS Core 110f	8	Q-SYS Core Software-based audio, video & control processor Network I/O: 128 x 128 Local I/O: 24	
Q-SYS CX-Q 2K4	12	CX-Q Series Four-channel Q-SYS network amplifier with 4x mic/line inputs 700 W/ch. at 8 Ω	
Q-SYS CX-Q 4K4	2	CX-Q Series Four-channel Q-SYS network amplifier with 4x mic/line inputs 1000 W/ch. at 8 Ω	
Q-SYS I/O-8 Flex (Now updated to QIO Series)	5	Q-SYS network I/O device 8x flex I/O channels Built-in Q-SYS web conference integration	
Q-SYS TSC-55w-G2	13	Q-SYS TSC Series touch screen controller 5.5 in (127 mm) screen dimension 1280 x 720 resolution	
Q-SYS TSC-116w-G2	2	Q-SYS TSC Series touch screen controller 11.6 in (295 mm) screen dimension 1920 x 1080 resolution	
Attero Tech by QSC unDIO2x2+	7	Dante/AES67 network audio interface 2 x 2 mic/line I/O Rack- or surface-mountable	
Attero Tech by Q-SYS C1	13	Single-gang network audio controller Available in black and white	



Q-SYS 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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QSC UK & Ireland Ltd.

6 Horizon Business Village
1 Brooklands Road
Weybridge, KT 130TJ

01932 639 6000

Outside the UK +44 1932 639 600