Lawo Technology for Austrian Pavilion at Expo 2025

Picture: Christian Schneider

Austria is represented at Expo 2025 in Osaka with a pavilion that not only explores the future but also makes it tangible - through architecture, content, and, above all, music. In the pavilion foyer, visitors are greeted by an audiovisual installation that brings the main theme, “Composing the Future,” to life, both artistically and technologically: a self-playing grand piano appears to interact live with an invisible orchestra - a perfectly synchronized performance by a MIDI-controlled instrument with a multichannel audio recording that meets the highest professional studio standards. Mozarteum Salzburg University was responsible for the technical realization of this elaborate sound installation, for which it relied on IP-based Lawo technology.

The entire audio production for the installation took place at Mozarteum Salzburg University’s Max Schlereth Hall. The production team used the IP-based Lawo production infrastructure installed there as part of a recent modernization project: an mc²56 production mixing console with 48 faders, redundant A__UHD core units, A__stage64 and A__mic8 audio I/O interfaces, and IP networking via Lawo HOME. This IP infrastructure management platform provides direct access to all networked resources and enables centralized configuration and system control via an intuitive

user interface.

The orchestral recording was carried out in two stages: first, the piano part was played on a Bösendorfer Enspire grand piano. Both its MIDI data and its audio signals were recorded. In the next step, the audio tracks were played back to the conductor and the ensemble as a headphone guide - allowing the orchestra to perform in perfect sync with the piano, without any acoustic interference from the instrument itself. Lawo A__stage interfaces were used to record the various instruments and sections with a 7.1 microphone array and additional spot mics, and the recording was mixed on an mc²56 console.

The Lawo console’s flexible routing and monitoring capabilities made it possible to precisely balance both the MIDI-controlled grand piano and the orchestral recordings. With the help of dynamic automation functions and the integration of directly controllable Waves® SuperRack plug-ins, a detailed sonic image was created - one that combines orchestral depth, spatial definition, and exceptional transparency.

At the pavilion itself, an automation system ensures that the musical installation operates reliably throughout the duration of the Expo. A media server controls both the MIDI data for the Bösendorfer grand piano and the playback of the multichannel orchestral recording. Audio output is delivered via a room-tuned multichannel system, offering visitors an immersive listening experience - as if the piano and the orchestra were actually performing live in a premium concert hall. Although the perfect synchronization of the physical grand piano with the recorded orchestral performance showcases the technical sophistication underpinning this project, visitors will first and foremost be struck by the emotional resonance it triggers.

Thanks to the integrated media and control systems at the pavilion, the playback environment is fully automated, redundantly secured, and designed for continuous operation with consistently high playback quality. The clarity and spatial dimension of the sound installation are largely made possible by the Lawo technology used for this production.

L-R: Peter Schmidt, Christoph Feiel. Picture: Christoph Feiel

In preparation for such complex productions, the Mozarteum University Salzburg recently modernized its audio control rooms. By choosing Lawo mc² consoles - including both an mc²56 and an mc²36 xp - and fully transitioning to IP-based audio technology, the university's infrastructure today meets the highest professional standards. The HOME platform supports networked operation across multiple control rooms, offers swift access to all signals, and significantly simplifies session management.

This technical foundation has not only proven its worth in the EXPO project, but also offers major benefits in day-to-day academic applications. Students and staff gain hands-on experience with professional workflows - from microphone setup and complex multitrack recording to automated mixing and final mastering. The installation created for the Expo is therefore more than just a showcase of Austrian innovation; it is also a milestone for hands-on education. With this installation, Austria's contribution to Expo 2025 sends a clear message: music as a bridge to the future, supported by technological excellence - "Composing the Future" in the truest sense.

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