

Amadeus Acoustics Downmix Engine



Amadeus Acoustics, a pioneer in active acoustics and immersive sound technology, today announced the release of ART::Director v1.3.1. The major software update introduces a highly sophisticated Downmix Engine feature alongside a suite of powerful workflow optimisations. This new capability resolves one of the performing arts industry's greatest challenges: translating complex, immersive venue mixes into standardised formats for broadcasting, studio pre-production, and ancillary monitoring.

While spatial audio has redefined the audience experience inside major auditoriums, venues frequently face the logistical headache of exporting those multi-channel mixes to external environments that lack massive loudspeaker arrays. The new Downmix feature acts as a direct bridge, allowing sound engineers to run multiple, highly customisable speaker-based downmixes in parallel following the primary in-house spatial mix.

The practical application of the Downmix Engine feature extends across the highest echelons of live entertainment and massive international broadcasts. For example, in an event on the scale of the Eurovision Song Contest, where Amadeus Acoustics served as an official technical supplier for 2026, the main audio mix in the arena must simultaneously serve several parallel destinations:

- to the Broadcast Van: Engineers can deliver a dedicated spatialised 5.1 or stereo fold-down directly to the mobile broadcast truck for pre-production, allowing most of the house mix to be prepared before or in between the very limited number of stage rehearsals.
- to Rehearsal and Green Rooms: Simultaneously, independent downmix feeds can be sent backstage so that production crews, artists, and the wider team can perfectly track their positioning and cues in the show's timeline, knowing exactly where they are in the show at any given moment.

"Immersive audio shouldn't be trapped inside the auditorium. The Downmix Engine ensures that whether you are a director checking cues in a stereo rehearsal room, a mix engineer in a mobile broadcast truck, or a performer waiting backstage, the integrity of the acoustic space is perfectly preserved." - Volker Werner, Amadeus Acoustics

The update also radically transforms the pre-production timeline for sound designers working on world-class performing arts spaces. For example, at a prestigious opera house like Theater an der Wien, a historic venue in the heart of Vienna which features an Amadeus Immersive Sound and Active Acoustics installation, the Downmix Engine feature unlocks an entirely new workflow between the studio and the main stage.

Instead of tying up the main auditorium for days, sound designers can use the Downmix Engine feature to build and tweak complex spatial soundscapes entirely within a separate, offline studio space using smaller, standard monitoring setups (5.1, stereo, or even headphones!). By placing the Downmix Systems as physical, interactive globes within the 3D software venue map, creative teams can accurately simulate how sound movements will scale. When the production finally moves to the main stage, the groundwork is already laid, drastically cutting down on-stage technical rehearsal time.

The Downmix Engine feature stands out due to its granular control. It supports standard formats like Stereo, 5.1, 7.1, and Atmos, alongside entirely bespoke loudspeaker configurations. Every parallel downmix system features an integrated size multiplier to widen or narrow the field based on the target room's loudspeaker resolution, individual fade controls for spatial and performing sources, and an independent, dedicated LFE (Low-Frequency Effects) output for pristine low-end management. Further enhancing this flexibility, performer sources can be exclusively mapped to the main frontal loudspeakers of the studio setup, ensuring isolation from the surround and overhead loudspeaker channels.

While the Downmix Engine feature represents a massive leap forward, the Amadeus Acoustics engineering team has packed v1.3.1 with significant architectural and quality-of-life upgrades:

- Advanced OSC Automation: Introduction of pattern-based OSC addresses alongside variables and properties in OSC addressing for deeply flexible

system control. This also ensures full compatibility with ADM-OSC. Scaling can be applied either to the overall boundaries or configured individually for each OSC source.

- **Acoustic Precision Tools:** Additional performer source gain offsets designed explicitly for fill, precedence and subwoofer systems, plus support for negative loudspeaker delay offsets.
- **System Reliability:** Significantly improved Director/DSP connection handling, automatic network port detection, and a built-in connection history log for rock-solid stability during live operations.
- **Creative Controls:** Adjustable crossfades between venue snapshots, customisable value mapping, and granular fade-out gains within immersive fade zones. Don't limit yourself to static speakers! With this new feature, loudspeaker positions can be automated just like audio sources.

ART::Director v1.3.1 is available immediately, completely free, for download [here](#). Existing users can update their software to unlock the Downmix Engine feature and advanced OSC features today by simply clicking on the blue 'info' button at the top right corner of the software's welcome page.

www.amadeus-acoustics.com