
IMMERSIVE CREATIONS
SPAT
REVOLUTION
FLUX::
ircam
Tools

Real-Time object-based oriented Immersive Live Engine

Spat Revolution is a software dedicated to the creation of immersive audio as well as real-time live productions. With the use of virtual spaces (called rooms), it is possible to position and move audio source objects with acoustic simulation.

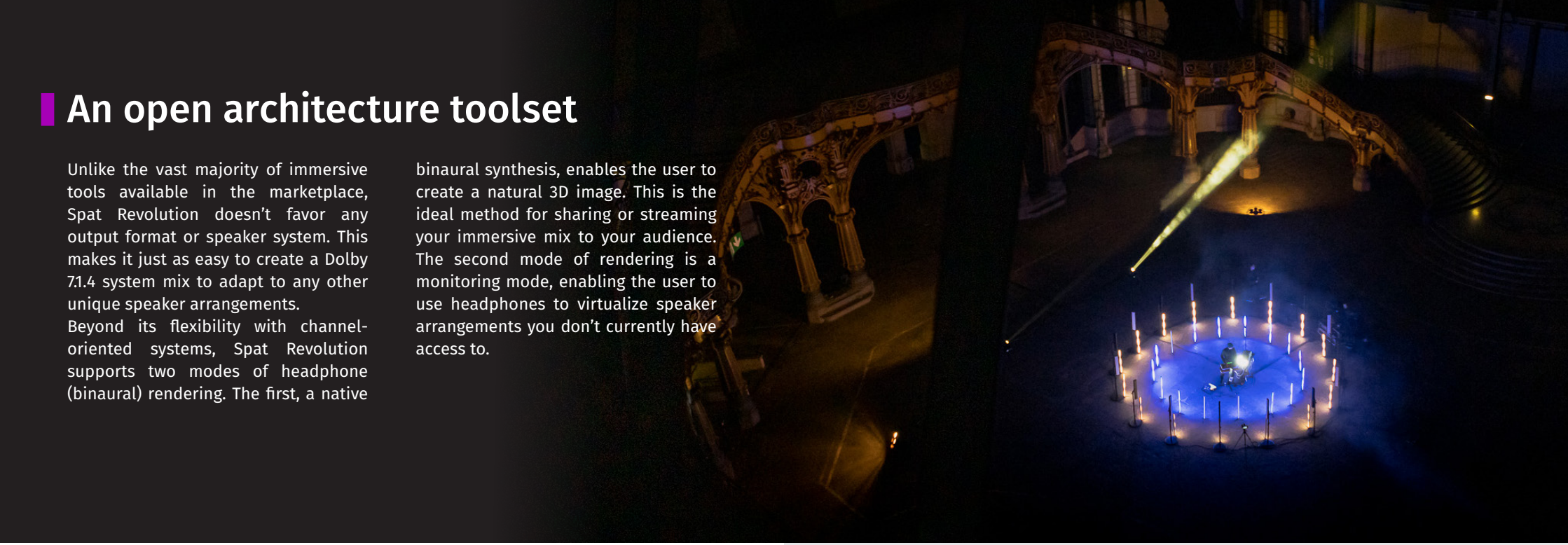
The processing of Spat Revolution is based on various spatialization technologies: High Order Ambisonic (HOA), Binaural and Transaural, and **Wave Field Synthesis (WFS)**, as well as traditional channel based 2D/3D renders together with different panning methods **(VBAP, VBIP, DBAP, DUALBANDVBP, KNN, LBAP, AEP, etc.)**

Dedicated to the immersive audio creation

Spat Revolution strives to provide an inspiring environment favorable to artistic creativity. Besides an intuitive user interface, Spat Revolution includes a variety of templates to easily integrate with DAWs such as Pro Tools, Reaper, and many more. Acoustic simulation, a fundamental aspect of Spat, brings the ability to create a sense of depth and reality.
Complementary to the traditional position parameters of objects found in 3D panning tools, Spat Revolution offers an extensive list of advanced object parameters based upon how humans perceive sound. These perceptual factors, e.g., presence and envelopment, are the product of years of research at the IRCAM and an attempt to give a perceptual vocabulary to parameters for the audio processing. The result is a new and exceptionally intuitive approach to mixing.

An open architecture toolset

Unlike the vast majority of immersive tools available in the marketplace, Spat Revolution doesn't favor any output format or speaker system. This makes it just as easy to create a Dolby 7.1.4 system mix to adapt to any other unique speaker arrangements.
Beyond its flexibility with channel-oriented systems, Spat Revolution supports two modes of headphone (binaural) rendering. The first, a native binaural synthesis, enables the user to create a natural 3D image. This is the ideal method for sharing or streaming your immersive mix to your audience. The second mode of rendering is a monitoring mode, enabling the user to use headphones to virtualize speaker arrangements you don't currently have access to.



An interactive and scalable workflow

Spat Revolution can adapt to a variety of workflows. The FLUX:: AudioPipe technology available in the Spat Send and Spat Return plugins makes it possible to integrate with a wide range of DAWs including Ableton Live, Pro Tools, Reaper, and Logic Pro, all on the same computer. The Spat Send, Return, and Room plugins also enable the user to record the automation of the Spat Revolution parameters directly to the timeline of your DAW, or interact with them via controllers. Moreover, the integration of the OSC (Open Sound Control) protocol enables you to control the application from a touchscreen tablet, another computer, or even a phone. Two-computer scenarios are possible as well for larger setups, to distribute the processor load.
The automation messages are then simply shared over the network as OSC commands. Spat Revolution can easily adapt from traveling configurations to the most demanding fixed installations. In short, Spat Revolution is simply the most adaptable Immersive mixing tool ever created!

An Immersive reverberation

The power of Spat Revolution resides in its reverb engine and the acoustic simulation it provides.
The result of years of research from IRCAM developers, Spat's reverb engine enables it to create an exceptionally natural acoustic simulation the most fundamental element of a truly immersive experience.
It delivers consistent and coherent performance while positioning source objects in a unified acoustic space.

ReaVolution

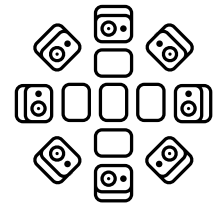
To easily implement the deployment of a system for immersive creators, FLUX:: offers ReaVolution, a truly unparalleled customization of Reaper.

This toolset includes around 80 scripts, fully transparent to the user, simplifying Reaper's use with Spat Revolution as the immersive rendering engine.

Immersive Audio Spatialization Techniques

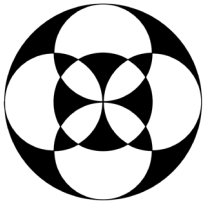
As an object-oriented mixing software, Spat Revolution adapts to various speaker arrangement configurations and processes the audio mix scene to the requested diffusion system. The different technologies and panning methods in the software allow it to adapt easily to speaker design arrangements for various productions with spatial audio techniques and panning methods to suit different applications. Spat Revolution's "multi-rooms" concept delivers simultaneous-use support for multiple immersive technologies including 2D/3D Channel-based, High Order Ambisonic (HOA), binaural, transaural, Wave Field Synthesis (WFS), enabling the user to deliver to multiple diffusion systems (virtual spaces using all or partial speaker arrangement setups). This offers extensive flexibility in creating custom 2D or 3D speaker arrangements, addressing both conventional immersive stage setups where 5, 7, or more speaker hangs are spread across the stage with somewhat equal separation between each, as well as arrangements of loudspeakers by the dozen in arbitrary locations.

The flexibility of Spat's multi-room functionality enables rendering a headphone (binaural) output, a standard stereo mix, and an immersive output, e.g., Atmos 7.1.4, all from the same system. It is easy to quickly change the diffusion system for an alternate render.



N channels

Binaural

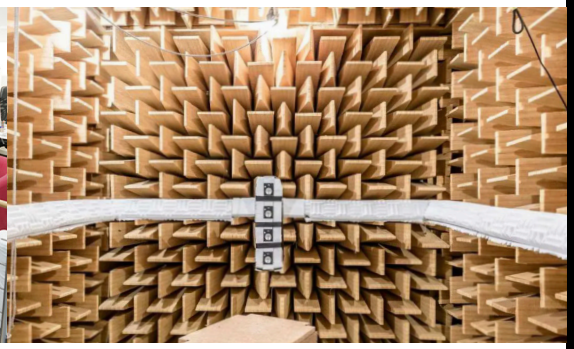


Ambisonic

WFS

Software engineering and technology

FLUX:: has been a software development partner with French research institute IRCAM (www.ircam.fr), since 2008, and Spat Revolution is the result of decades of research and achievements. Many of these technologies have been successfully deployed in live sound installations with products including Spat in MaxMSP, Panoramix, with the legacy Spat audio plugin, and most recently with Spat Revolution.
The FLUX:: and IRCAM cooperation offers a variety of spatial audio techniques to users and designers, sharing a vision of open development. Behind these various spatialization and audio panning techniques is the desire to offer creativity, flexibility, and the ability to adapt to each application and creative challenge, whether sweet spot-centric, live performance, or installation-based, and irrespective of where the audience may be distributed.



FLUX:: | ircam Tools

Hardware

Running on generic hardware means that a vast pool of audio interfaces (e.g., MADI, network AVB, Dante / AES67 virtual audio entities) and a wide range of sample rate options (from 44.1Khz – 384Khz) are available for the system device setup.
Low latency can be achieved with appropriate choice of audio interface, coupled with Spat Revolution's ability to operate with small block size software options (starting at 16 block size). The latency is fixed, predictable, and can be easily defined in accordance with the user's hardware setup being properly resourced and optimized for real-time audio.

WWW.SPATREVOLUTION.COM

FLUX:: | ircam Tools