

# A stratified approach for sound spatialization

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## ABSTRACT

We propose a multi-layer structure to mediate essential components in sound spatialization. This approach will facilitate artistic work with spatialization systems, a process which currently lacks structure, flexibility, and interoperability.

## 2 NEED FOR INTEROPERABILITY

Creative work on spatialisation is too much tied into the particular software, rendering techniques, storage formats and playback systems used. There are great individual and context-related differences in the compositional use of spatialization, and there is no one spatialization system that could satisfy every artist.

This lack of flexibility hinders creative processes, interchangeability and possibilities for working on and reproducing works outside of their original context.

Different spatialisation applications should be readily combined, guaranteeing efficient workflow for sound spatialization. This requires structure, flexibility, and interoperability across all involved components.

### THE CURRENT PARADIGM

**DAWs** mainly work with common consumer channel configurations; mono, stereo and 5.1. Beyond this multichannel and spatialization capabilities are limited, and adequate spatialization tools for working in DAWs are missing, but strongly desired.

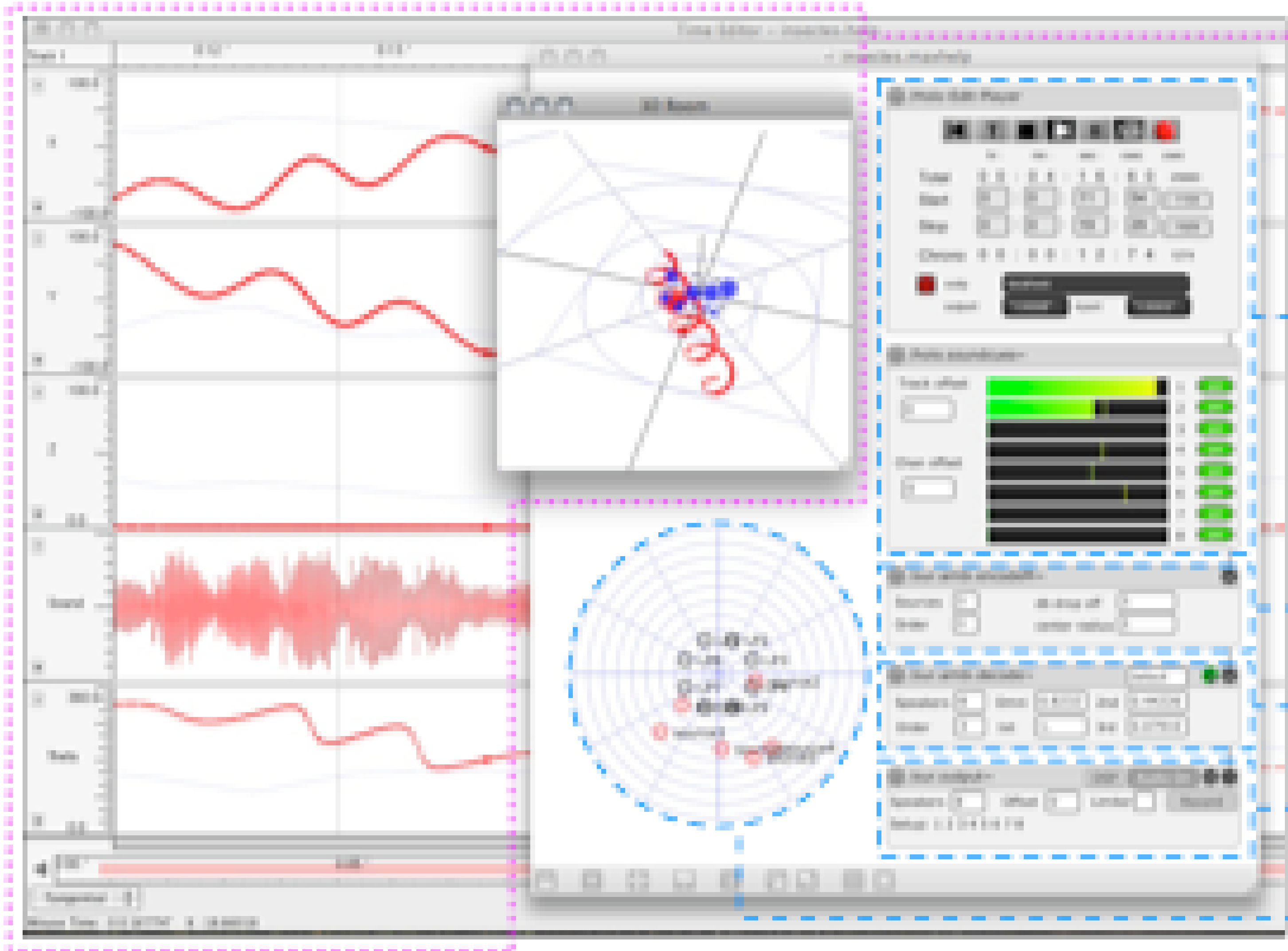
**Media programming environments** (e.g. SuperCollider, Pd and Max) are capable of spatial sound synthesis. Each tool, however, may only provide solutions for a subset of compositional viewpoints.

A variety of **stand-alone** spatialization systems are in development.

## 3 STRATIFIED APPROACH



## 4 IMPLEMENTATION



**Authoring Layer**  
Holo-Edit Communication

**Encoding Layer**  
Ambisonics Encoder

**Decoding Layer**  
Ambisonics Decoder

**Hardware Abstraction Layer**  
Accessing the DAC

**Authoring Layer**  
ICST Ambimonitor