SPATIAL MUSIC PERFORMANCE WITH THE HEXAPHONIC GUITAR

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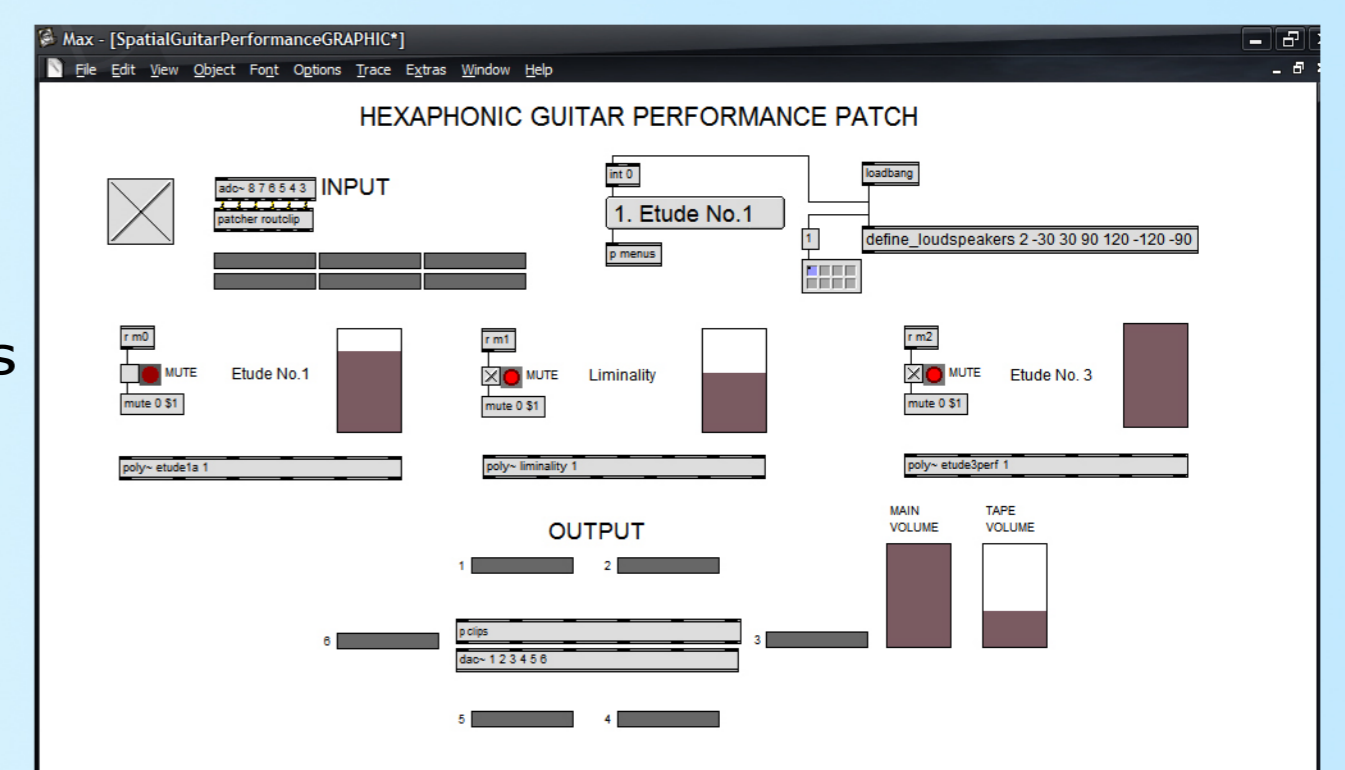Supervisors: Donnacha Dennehy & Dermot Furlong

Spatial Music …?

Spatial music can be defined as any form of music in which the spatial location of performers or sounds is used as an explicit compositional parameter. Contemporary electroacoustic composers such as Karlheinz Stockhausen, Pierre Boulez, and more recently, Denis Smalley and Natasha Barrett, have all composed numerous works for multiple loudspeakers and/or performers distributed around the audience.

Live Spatial Music

Most spatial music is not performed live but rather consists of either pre-composed multichannel works which are simply played back, or pre-composed stereo tracks which are diffused live to a loudspeaker orchestra. Linking the musical gestures of an instrumental performer with the spatial gestures of the electronic track is a significant challenge, as the spatialization process is often not related to the musical instrument in any obvious way. In addition it is rarely practical or possible for a single performer to concurrently play and diffuse a musical instrument.

Spatial Music Instruments

Stringed instruments fitted with polyphonic pickups produce a separate audio signal for each string. The discrete multi-channel output of these instruments would seem to be very suitable for spatialization to a multi-channel loudspeaker array. By linking the spatial location to the choice of string, the spatialization process can be synchronized to the physical performance of the instrument. In addition, the performer does not need to learn any new gestures or instrumental techniques.
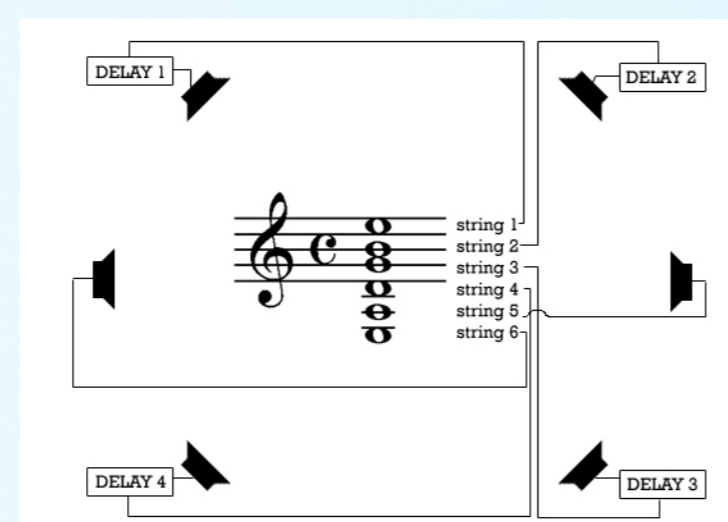
Composing for Hexaphonic Guitar

In the piece Etude No. 1 for Hexaphonic Guitar, the hexaphonic guitar output is routed to a six-channel loudspeaker array via four synchronized tape delay effects. The opening section consists of a sequence of two-note chords on the four high strings which mark out the spatial boundaries of the piece. Each of the two iterations of the four chords is followed by a six-note coda which introduces the two lower strings and their associated spatial locations. The main body of the piece consists of six voicings of a six-note chord based on a quartal harmony. Each chord is played as a repetitive two note pattern on the two low strings accompanied by single delayed notes which cycle sequentially through the four high strings.

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