



THE UNIVERSITY OF AIZU
Tsuruga, Ikki-machi, Aizu-Wakamatsu Ci
Fukushima, 965 Japan
phone 0242-37-2500 fax 0242-37-2528

Audio Windows for Virtual Concerts II

Michael Cohen
Human Interface Lab
University of Aizu 965-80
Japan
voice: [+81](242)37-2537
fax: [+81](242)37-2549
email: mcohen@u-aizu.ac.jp

Nobuo Koizumi
Lab for Information Technology
NTT DATA Communication Systems Corp.
Kowa Kawasaki Nishi-guchi Bldg.
66-2 Horikawa-cho, Saiwai-ku
Kawasaki-shi, Kanagawa 210
Japan
voice: [+81](44)548-4602
fax: [+81](44)548-4693
email: nkoizumi@lit.rd.nttdata.jp

(This demonstration builds conceptually on the system introduced by its prequel "Audio Windows for Virtual Concerts I." As before, the viewer/listener's stereo VCR must be set to 'hi-fi' mode, and a stereo headset should be used in order to best hear the spatial sound effects in this video.)

Keywords: binaural directional mixing console, groupware, mixel ([sound] mixing element), sonic (analytical) cubism, spatial sound

Abstract: MAW enables multiple auditory presence, overlaying soundscapes via the superposition of multiple sinks. This allows audio windowing to present multiple acoustic perspectives simultaneously. The user, iconified by multiple sinks, can leave a "pair of ears" in one strategic location, while placing another virtual pair somewhere else...

This feature can be used to sharpen the granularity of control of spatialization. In a groupware environment there may be inhibitions on relocating sources shared by others. But multiple sinks allow one to monitor a main conference while attending a separate sub-caucus. In this video, the user wants to pay close attention to multiple musical channels.

Anticipating level difference localization, each source is spatialized only with respect to the loudest sink, so that a listener's perception of a source depends on which of the (possibly multiple) sinks can best hear it. The experience of being in multiple places simultaneously, like all virtual situations, may define its own rules. A psychophysical interpretation is important as an interface strategy, making the system behavior consistent with users' intuitions, artificial but accessible. The overlaid existence suggests the name given to this effect: sonic (analytic) cubism, presenting multiple simultaneous acoustic perspectives. Being anywhere is better than being everywhere, since it is selective; MAW's schizophrenic mode is distilled ubiquity: (groupware-enabled) accommodation of multiple objects of regard.

Categories: Communication with Realistic Sensations, 3D Visual and Auditory Displays, VR Interaction and Navigation Techniques, Distributed VR Systems