Centers for New Music Resources

Budget Justification

1) Upgrade audio system

At CCRMA, where musicians's ears are the final judge of the the work accomplished, there is an obvious need for listening conditions of the highest quality. This is an ongoing effort, supported last year in part by a grant from NEA.

2) Upgrade Systems Concepts Digital Synthesizer

a) direct AD input

Direct AD (Analog to Digital converter) input to the Systems Concepts Digital Synthesizer means that the real time processing power of this device can be applied to the signal as the performer plays into a microphone. We have recently installed an economy version of this approach with a single input channel. In this version trombonist Stuart Dempster, for example, was able to play into a microphone in CCRMA's well damped digital recording studio and at the same time hear himself via earphones playing in a large cathedral. In that case the device was programmed to simulate the reverberation characteristics of the chappel at Avignon, the site of his recent recording.

The proposed upgrade would increase this capability to two channels where, for such instruments as the violin or piano, a single microphone provides inadaquate pickup. It would also provide greater bandwidth than the current system, again permitting high quality digital recording and processing of such broad bandwidth instruments as the violin and piano.

b) command-stream processor

This will, in effect, add a small special purpose computer to the current device. As it now stands the device is capable of extremely complex real time synthesis and processing. However there is a clear need to be able to have hands-on control of the device. At this time, for example, all commands to the device have to be passed to it before we start hearing the sounds it produces. If we want to change something we have to change the commands and then listen again to see that we told it the right thing. A command-stream processor would enable us to change commands as we listen. We could, for example, program the processor to read a slide-pot as the amplitude of one of the instruments in a complex mix as we listen. We would thus be able to use our ears in real time to determine musical results - the preferred approach of musicians throughout the world.

Note: Items 3 and 4 of the budget, discussed below will be provided by Stanford University as in-kind contribution. This is part of a $300,000 computer music system now being installed by CCRMA for which Stanford is currently raising funds.

3) Graphical display system

This is the system that provides graphical display computer terminals to the users. This is being planned to accomodate up to twelve musicians working at graphical display terminals at one time.

4) Ampex DM9300 Disk Drive

The main permanent storage devices of the new CCRMA system are 300mbyte

disks. This one disk drive will increase the storage capacity so that, for example, 30 minutes of high fidelity stereo music could be recorded in digital form and played back without interruption.