

# **Adaptive-Bandwidth, Improvised New Music Over the Internet**

## **MAS.890 Final Project**

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This project is a system for music performance over distance through the network. It allows for collaborative improvised music, using the physical distance and latency between players as a feature for new music generation rather than a drawback. The system adapts to the network and can either send CD-quality audio, MIDI data, or synthesis parameters, depending on the bandwidth available. An early working implementation of the system has been experimented between the MIT Media Lab and the Media Lab Europe in Dublin.

The music is based on the beat-synchronization concept. Each player can choose to synchronize any of the other players to an arbitrary beat of the measure, allowing for many possible mix. The minimum possible delay is one beat. Each player gets its own mix from the server. The tempo is fixed by the server but can be changed by any player at any time. The system allows you to record your mix locally to share and compare it with your other music partners.

The system is currently being developed. Some visual feedback based on real-time audio analysis will be added to convey continuously the information about the state of the music and prepare the remote player for any possible dramatic changes.

It is hoped that the system will encourage the creation of new music that would not be possible with musicians in the same room. The following image is a screenshot of the current prototype, for two players and simulated server tracks.

