**APPENDIX 1**

**AMBISONIC ENCODING IN MATLAB**

This appendix contains the MATLAB scripts that were used to encode audio files to a higher order ambisonics format. The encoding-decoding process was accomplished a by using two MATLAB scripts:

1. ENCDECmove.m contains the ambisonics encoding function. The function takes as its arguments two sound sources (x, x1), the sampling frequency (Fs), and the initial and final positions of the azimuth and elevation angles for both sound sources. Further, the audio is encoded to 5th order ambisonics, resulting in 36 sound channels. For each of the 48 speakers being simulated, the 36 different audio streams are summed, with a unique weight (derived using a decoding matrix) being used for each stream, to obtain the final spatialized sound.
2. encdecFunction.m contains the call to ENCDECmove.m. It also contains HRTF based position computations (using the ARI HRTF dataset) to allow the user to directly listen to the ambisonics encoded-audio using the MATLAB script.