6. METHODOLOGY

1. Literature Survey
Latest IEEE journals and International conference magazines in the field of active noise control systems are taken into consideration for Literature survey and problem identification (1990 – 2009).

2. Problem identification
To achieve perfect noise reduction for speech signals transmitted through the wireless medium using adaptive algorithms. In such a communication, all the noise is added in the channel. The noise is highly random. Here there is no source for obtaining a correlated noise at the receiving end. Only the received signal can tell the story of the noise added to it hence somehow, only if it is possible extract the noise from the received signal, through some means, then the above mentioned adaptive techniques to enhance the signal to noise ratio (SNR) of the received signal.

The adaptive techniques to reduce noise are effective, when the reference noise is highly correlated to the corrupting noise. But owing to the highly random nature of the corrupting noise, it is difficult to estimate it. Here, to generate an effective reference noise from the received signal itself, this can be then used to reduce the noise content of the same received signal. The technique used is that of trying to graze through the informative signal and thus trying to find the approximate noise and information content at every instant. This technique is based on having first two samples of the original signal correctly. Next to estimate the third sample using the first two samples. This is done by finding the slope between the first two samples and extending the same for the third sample. This next estimated sample is subtracted with the value at that instant in the received signal.

\[
m = ES_{n-1} - ES_{n-2}
\]

\[
ES_n = ES_{n-1} + m
\]

\[
N'_n = X_n - ES_n
\]
4. Software Simulation

The output results are taken by Matlab simulation and ‘utopia windows start wav.file is used. It represents all the stages of the process, viz. the original, the noise corrupted signal, the estimation of the signal using grazing estimation, and finally the output signal.

It can be seen that the o/p signal is very close to the original one. The gain between the received and filtered signal is 30db. Similar results were obtained for different test signals of standard wav. Files viz. Ding and tada.

5. Journal Publications
