

## ABSTRACT

Informations about make new radio's advertisement (among others, about time broadcasting, what time broadcasting of an advertisement in a day and how much financial was got from the advertisement) was secreted. Only certainly people by access for watch it. How about an advertisement company want to know, how many time their competitor has broadcasted their's advertisement in a day. Do you need waiting for a long time in front of the radio, just to count it?

In this Final Project has made an application to count appearing an radio advertisement by Delphi programming. By matching both advertisement and recording broadcasting, as long as finded the same pattern or parameter, the counter will add. The matching uses a methode to change time domain to frequency domain by Fast Fourier Transform. The result of FFT processing to the advertisement are information of frequency and power spectrum. Recording of broadcasting will get FFT processing too, pattern of advertisement will be matched to pattern of broadcast recording by overlap. Matching process using statistic metode, where every found the same data will be saved on the buffer to count matching percentage value, if matching percentage value fulled of treshold, counter value will increase. Beside that would be done matching by Simple Template Matching, where each one record matching will be count it's MSE (Mean Square Error) value.

The result of testing showed that the best windows taking is less than or equal  $\frac{1}{2}$  second and the best interval is less than or equal  $\frac{1}{2}$  from window. By Fundamental frequency on that's windows and interval range will be got corect result. Beside that we can conclude that more and more big matching percentage, more and more complete the same data, more and more approach zero of MSE value, more and more loosing the error.

**Key Words:** Fast Fourier Transform, Fundamental Frequency.