ABSTRACT

Radio Detection And Ranging (Radar) is an electromagnetic wave system that is useful for detecting, identifying, and measuring a target. One type of radar is the Frequency Modulated Continuous Wave (FMCW). Besides in the military field, the use of radar is also implemented in the detection of hand gestures. This is commonly referred to as communication between humans and machines or Human to Machine (H2M).

This Final Project discusses the workings of an FMCW radar system using delay blocks instead of SDR in detecting a target. This research was conducted in several cases. When using 1 block delay, 2 block delays, and 3 block delays. The values in the delay block are assumed to be different hand gestures. For data retrieval, the data will be recorded in the file sink block on GNU Radio for 10 seconds and the results will be seen in Matlab.

From the results of the simulation carried out, it is evident that the three targets assumed by using the delay block produce different outputs. The difference is seen in the Amplitude Output on GNU Radio, LPF Output, and also the FFT Output. The greater the delay value, the farther the distance and phase difference produced.

Keywords: Radar, FMCW, Hand gesture, GNU Radio.