ABSTRACT

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Loran (**LO**ng **RA**nge **N**avigation) is a terrestrial navigation system using hyperbolic lines of position method, using low frequency radio transmitters from 90 to 110 KHz with signals that propagate along the surface of the Earth (ground waves), and using high radiated power to cover large area.

A Loran navigation system use some land-based transmitting station widely spaced till hundreds of kilometer and organized in one chain. Each Loran chain consists of 1 master station and at least 2 secondary stations. Loran transmitter transmit Loran pulse and then receiver measures the difference in times of arrival of signals (time difference abbreviated TD) from which hyperbolic lines of position are determined. The point where two lines hyperbolic cross is the position of the receiver.

At this Final Task will be designed and realized Loran-C receiver subsystem that able to process and detect Loran-C navigation signal use FPGA to get output time differences value.

Result of realization Loran-C receiver subsystem are FPGA can be used for Loran-C receiver subsystem with certain precision and only about 5 % logic block used from all logic block that is available on FPGA. Therefore it can be done furthermore development and research by enhancing some other service able to be processed like timing and paging service on Loran-C receiver system.

Key Word   : Loran-C, Navigation, Time Difference, FPGA