Lab (Linux SDR w/ Ethernet) Milestones

Each milestone will be worth 25 points. The order in which you do these milestones is your choice, but each one should be turned in by one of the Milestone due dates on Canvas - no late assignments will be accepted (these are milestones after all!)

Milestone Option 1: UDP Packet Sending

Write a program to send a fixed number of UDP packets in the format described in the lab appendix. The data payload can be completely fake, just not all zeros. The packet should have the right length and port, and should go to a known, but configurable destination. Ways to do this would be a command-line parameter, config file, environment variables..etc.

*Turn In: an executable program which the instructor can run on the Zybo. A call to it (ex) : “udpsender 192.168.1.23 10” will send 10 packets in the lab format to IP address 192.168.1.23. Again, how your program gets the configuration parameters is up to you – just make sure you provide instructions to me on how to run it and change those parameters.*

Milestone Option 2: Radio+ Custom FIFO Peripheral

Create a PL design that has your radio peripheral and the “simple fifo” as described in class (either in the radio peripheral itself, or as a separate IP). Demonstrate that this setup works by reading 480,000 samples from the FIFO (you can throw them away). It should take around 10 seconds. You can time by just watching and counting in your head.

Printf(“hello I am going to read 10 seconds worth of data now…\n”);

<< put some code here which reads the FIFO count and then the FIFO itself until 480000 words have been read, this can be as simple as reading the FIFO count register – if it is greater than 0, then reading the FIFO data register that many times, and then incrementing the total count of words that you have read…. Until you get to 480000 total words read >>

Printf(“Finished!\n”);

Turn In : a PL “.bit.bin” file which I can load, and an executable file which will run the demonstration