SDR - Spectrum Sensing

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Overview

- Started Development of PFU for Spectrum Sensing APP
- Finalization of MATLAB Implementation
- Integration of C++ Code into Wiserd
GOAL:

- Fragment FFT data from averaging unit and send it in packets of size 256 words (1024 bytes) to the output logic of the circuit.

PROGRESS:

- Have started to program a small-scale version of the PFU, splitting an 8-bit vector into 2 4-bit vectors. Have run into some bugs, state machine not shifting when supposed to.
Finalization of MATLAB Implementation

- **Fixed moving average filter**
  - Realized we were averaging complex samples as opposed to the magnitude of complex samples

- **Fragmented original script into multiple functions**
  - Plan to do the same with C++ implementation

- **Final bug fixes and improvements**
Finalization of MATLAB Implementation
Integration of C++ Code into Wiserd

- Adding a receiver module to existing Wiserd framework
- real_time_plotting module
  - Store samples in a buffer
  - Once buffer is filled, generate FFT and plot using Gnuplot
  - Repeat until user terminates session
Next Week

- Continue programming the PFU
- De-bug current sample program
- Scale up and add features like data_en
- Testing/editing new receiver module in ORBIT
- Making a user interface