**Motivation**

To improve conventional wireless communication and allow better usage of the electromagnetic spectrum by sensing the frequency content in the environment and avoiding interference between users.

**Objectives**

- **Project Goal:**
  1. To be able to detect a (randomly generated) signal from a transmitter using multiple receivers (Fig. 1).

**USRPD**

- **USRPD (Universal Software Radio Peripheral Daemon)** [1] is a software package, created by Dragoslav Stojadinovic, designed to work with spectrum sensing using multiple transmitters and receivers (Fig 2).
- Receivers are able to communicate with a central controller and perform various functions.
- USRPD is used to obtain and process data acquired by energy calculations performed on the spectrum.

**Results (continued)**

- **Graphical User Interface Design**
  - Designed a MATLAB Graphical User Interface to create a spectrogram for visualization (Fig. 3);

**Future Work**

- Develop a method to compare different sensing algorithms
- Configure our control program to display results in real time.
- Allow for user-inputted sensing algorithms.

**References**


Project website: https://sites.google.com/site/winlabss/
Project github: https://github.com/PhilipRChan/USRPD_Control/