Group number: 37

Project title: Open-Source Prototyping of Advanced Wireless Systems for Smart Agriculture and Connected Rural Communities

Client &/Advisor: Hongwei Zhang, Matthias Sander-Frigau

Team Members/Role: Zequn Wang – Meeting Scribe

Dylan Sharp – Meeting Facilitator

Jiawei Deng – Chief Engineer

Zhenwei Su – Report Manager

Shaohang Hu – Test Engineer

Yulin Song – Test Engineer

- **Bi-Weekly Summary**

    Due to the COVID-19, we had moved all of our tasks online. We discussed about the OpenWRT WIFI router options this week and Professor Hongwei decided to purchase 2 routers. Besides, we made a table contains functions we may need to use in our program from Mac802.11.

- **Past week accomplishments**
    - Jiawei Deng
        - Improving Pseudo Code for PRK Scheduling.
            - Developed parameters for the input of the code.
        - Digged into Mac802.11 source code and made a table of potential functions that will be applied in our program. Table Link: https://iastate.box.com/s/yj3csebr7wzfd2vaccbo972ofutdnaz2
    - Yulin Song
        - Read tutorials of building OpenWrt driver library.
        - Implementing pseudo code with C.
    - Shaohang Hu
        - Keep Identifying functions that required for PRKS algorithm.
        - Looking for solution on hardware virtualization remotely
    - Zhenwei Su
        - Study the tx.c and rc.c to look for the functions that we need and find most functions that we need
    - Zequn Wang
        - Share my knowlegde with Jiawei about how to correct call function in RX.C and TX.C file.

- Looking for how to remotely virtualized hardware.
- Dylan Sharp
  - Read over PRKS and started looking into Jiawei's pseudocode for PRKS.
  - My understanding of PRKS is better

- **Pending issues**
- Still have not defined which functions we will need to edit. For sure within functions along the Rx and Tx paths but those need to be defined
- Implement pseudo code into the kernel
- Build an architecture work which contains the shared library so that we can use to implement our code.
- Industry sponsors source code for implementation on top of the TVWS.

- **Individual contributions**

NAME	Individual Contributions	Hours this bi-week	HOURS cumulative
Zequn Wang	1. Learn mac80211 source code and how to use it, and other knowledge relative to receive and sent packet. Help Jiawei to implement the code by correct call and using function in RX.C AND TX.C 2. Study shell libraires	10	47
Dylan Sharp	1. Better understanding of PRKS 2. Started reviewing Jiawei's current work with PRKS psuedocode.	9	52
Shaohang Hu	1. Identifying the functions and parameters that need for the PRKS algorithm. 2. Looking for solution on hardware virtualization remotely. Preparing for next step of inplementation	9	50
Zhenwei Su	1. Look for functions that we need 2. study	9	47
Jiawei Deng	1. Develop parameters for Pseudo Code. 2. Studied Mac802.11 source code and made a table of functions.	12	59
Yulin Song	1. Read tutorials of building OpenWrt driver library. 2. Implement pseudo code with C.	10	44

- **Comments and extended discussion**

- **Plans for the upcoming bi-week**
  - Shaohang Hu
    - Implementation of PRKS.
    - Hardware setup
  - Zequn Wang
    - Working with Zhenwei, study about shell libraries.
    - Hardware setup
  - Jiawei Deng
    - Try to write actual program based on Pseudo Code.
    - Cooperate with Zequn and Zhenwei to figure out all functions we may need in our program.
  - Dylan Sharp
    - Finish ONAMA Psuedocode
    - Finish Review of Jiawei's psuedocode and add to it
    - Compile OpenWrt Toolchain for the version we are using
  - Yulin Song:
    - Keep implementing pseudo code with C.
    - Cooperate with Dylan and Jiawei about PRKS and linkage to TDMA implementations.
  - Zhenwei Su:
    - Study shell libraries
    - Help complete pseudo code