
EE/CprE/SE 491 WEEKLY REPORT 2
September 23, 2019 – October 6, 2019

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

○ **Weekly Summary**

The last two weeks were focused on continuing to expand our knowledge of the PRKS algorithm. In addition to studying PRKS more we added more detail to our Gantt chart, cross-compiled a hello world application, and starting reading into the ONAMA and prtRT algorithm.

○ **Past week accomplishments**

- PRKS Knowledge Update – Jiawei, Zhenwei, Zequn
 - Basic understanding of concept and structure
- Gantt Chart Updated - Dylan
 - Broke larger tasks into smaller tasks that should take roughly 1-2 weeks to accomplish
- Started implementing QEMU – Shaohang
 - System environment setup. Find file system on MacOS not supporting well. Setup Ubuntu for a try.
- Cross Compilation of hello world application – Dylan
 - Make some progress following this tutorial: <https://electrosome.com/cross-compile-openwrt-c-program/>
 - Was not able to finish, ended up pivoting to learn ONAMA algorithm
- ONAMA Algorithm understanding – Dylan
 - Started this during the second week.
 - This algorithm is a scheduler based off a given transmission conflict set input.
 - Given conflict graph (set) it will assign priority to each node then calculate the maximum independent set at each time t. That set produces the maximum number of nodes that can transmit at the same time t.

○ **Pending issues**

- QEMU is giving us some troubles, we believe that we might be missing or misconfiguring a driver.

○ **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Zequn Wang	Learning PRKS Algorithm and summarize the parameters	11	21
Dylan Sharp	ONAMA understanding, Gantt chart, Cross-Compilation	13	23
Shaohang Hu	QEMU and OpenWrt	12	23
Zhenwei Su	Starting learning pktRT Algorithm	11	20
Jiawei Deng	Learning PRKS Algorithm and summarize the parameters	12	24

○ **Comments and extended discussion**

Ended up backlogging the cross-compilation task for now so that we can move all resources to understanding the various algorithms

○ **Plans for the upcoming week**

- Continue ONAMA algorithm understanding – Dylan
 - Read / Take notes on ONAMA and present knowledge gained to team
- Continue the understanding of PRKS algorithm – Jiawei, Zequn
 - Focus on defining PRKS Parameters
- Start to read pktRT algorithms – Zhenwei
 - Read pktRT and share knowledge with team
- Investigate QEMU issues – Shaohang
 - Build kernel image for MIPS devices