EE / CPRE / SE 491 - sdmay20-38
iFPGA - Intermittent Intelligent FPGA Platform
Week8 Report

3/14/20 - 4/2/20
Client: Henry Duwe
Faculty Advisor: Henry Duwe

Team Members:

Jake Tener - Team member, SW focus
Jake Meiss - Team member, HW focus
Andrew Vogler - Team member, FPGA focus
Zixuan Guo - Team member, FPGA focus
Justin Sung - Team member, FPGA focus

Weekly Summary

- Have communication with SPI and Core processor on the Nano
- Finished work on schematics for PCB design and start to work on Layout
- Implement functionality of C++ Sound Analysis library
- Full-fledged modular testing of C++ Spectrogram generation
- Port the MAC design into Libero IDE and confirm functionality
- Expand the MAC into 10x10

Past Week Accomplishments

- MAC Design - Zixuan Guo
    - Expand the size of the MAC to compatible with the Data
    - Able to communicate with the SPI and the AMBA protocol.

- PCB Design - Jake Meiss
    - Cleaned up schematics and layout
    - Received PCB board and starting to populate it
    - Made BOM and ordered parts list

- SW - Jake Tener
    - Finished implementing C++ Spectrogram generation
    - Finished interfacing Spectrogram implementation with Python script
    - Developing with finished product diagram from last week in mind

- HW - Justin Sung, Andrew Vogler
    - Continue progress towards establishing SPI data communications between the MSP430 and the NANO.

Pending Issues

- Data transmission is not being caught by the SPI core in the Nano.
- Full testing of C++ program may yield less accuracy than hoped for
- Coronavirus implications on project. We will not be able to attend lab to work on applying software to hardware. Also meeting together and with client will get extremely hard.
- Simulation of the new MAC and toggle it into FPGA design

Individual Contributions

Team Member	**Contribution**	**Weekly Hours**	**Total Hours**
Jake Tener	SW	17	74
Jake Meiss	PCB Design	10	77
Andrew Vogler	HW	13	70
Zixuan Guo	MAC Design	14	69
Justin Sung	HW	16	76

Plans for Coming Week

- Achieve functional data transfer between SPI and Core processor
    - Be able to write data from NANO to MSP430
    - Be able to transfer data between MAC and the other logic components
- Integrate the MAC design into Libero IDE
- Test the new MAC process
- Electrical Design
    - Documentation and testing plans
- Software
    - Finish modular testing of C++ program
    - Begin to port projects onto MSP