EE/CprE/SE 491 Bi WEEKLY REPORT 4

10/7/22 – 10/21/22

Group number: 17

Project title: Bitcoin Mining Asic

Client &/Advisor: Prof. Duwe / Prof. Duwe

Team Members/Role:

Dawood Ghauri / Design Workflow

Constantine Mantas / Team Organization Leader

Soma Szabo / Component Design

Courtney Violett / Testing

o **Weekly Summary**

Over the past two weeks our group has primarily focused on developing the SHA1 firmware and ensuring the hardening process was performed correctly by looking at gate level simulations. Our group has made progress developing the firmware that will simulate our ASIC. The current design for the firmware will include receiving information from the user that they would like to hash. It will then hash that information using openssl, and return the digest to the user. We also made progress on the hardening process of our design through openlane. We have the wrapper for the design hardened, but are still working on the gate level design simulations. We also met with the next senior design group and walked them through simulating and hardening an initial adder design using Efabless's local work environment.

o **Past weeks accomplishments**

Made progress in using openssl to hash information that is passed from command line. Also have made progress with using openssl on our local machines.

We have gotten the user space successfully hardened using openlane. We are now working on getting the GL and RTL level simulations passing.

Met with the next senior design group this past weekend and gave them the designs for our simple adder. Then, we walked them through the hardening and simulation processes for Efabless.

- Dawood: Assisted in getting the next group set up with simulation and hardening processes.
- Soma: Got the user wrapper hardened and made progress through GL simulations. Will start integrating the SHA1 firmware and ensure it simulates correctly for both RTL and GL.
- Constantine: Organized follow up group team meeting and information that would be provided to them. Worked on firmware as well.
- Courtney: Worked primarily on getting openssl working locally.

o **Individual contributions**

NAME	Hours this week	HOURS cumulative
Constantine Mantas	7	97
Courtney Violett	7	93
Dawood Ghauri	7	97
Soma Szabo	7	104

O **Plans for the upcoming week**

- Constantine Mantas: Work on getting openssl usable on local environment and furthering progress of firmware.
- Courtney Violett: Get local environment set up using openssl to hash information passed to it as well as other components for firmware working.
- Dawood Ghauri: Assist on getting the entire project hardened, GL, and RTL simulations working.
- Soma Szabo: Make progress or finish the RTL and GL simulations.
- Team: Clarify the description of our new design for our Efabless submission as well as providing them simulations and our hardened design.