ECE 497: Special Project
Weekly Report
Week 08

Alexander Lukens Karl Hallsby

Illinois Institute of Technology

March 18, 2021

What We Did

- Olimex JTAG debugger came in, works correctly
- We can now finally upload C code to the FPGA and run it successfully
- At the moment, we are using the "Sifive Freedom E300" configuration (built on a previous version of Chipyard)
- Continued to work on making our code a submodule.
- What happens is we want to extend chipyard while depending on chipyard.
- Leads to a circular dependency that SBT cannot resolve.
- Might be an unreasonable task for SBT.
  - Or, Karl is writing the `build.sbt` incorrectly.

What We Learned

- Chipyard Arty functionality is actively being worked on.
- Don't trust documentation, it is not always correct. (Sifive documents provide wrong UART speed, caused issues with UART communications)
- Making our code depend on Chipyard while also extending Chipyard's does not seem to be feasible.

Next Steps

- Prepare full documentation of what we have learned so far.
  - Debugger
  - Chipyard and its build process
  - Relevant helpful links
- Identify reasonable goals in preparation for ECE Research Day.

References

Alon Amid et al. "Chipyard: Integrated Design, Simulation, and Implementation Framework for Custom SoCs." In: *IEEE Micro* 40.4 (2020), pp. 10–21. ISSN: 1937-4143. DOI: 10.1109/MM.2020.2996616.