492 Bi-Weekly Report 1
SDMay24-12

Agenda

- Introductions ?
  - Kareem Eljaam
  - Caleb Rock
  - Ben Meinders
  - Colsen Selk
  - Logan McDermott
- Review of Design from 1st Semester
  - Still need to hash out more details on LZW compression algorithm
  - Client considers any amount of compression a success, LZW should be possible to implement and will compress data
- Discussion of Changes to the Design
  - Clarification of Image Compression versus Video Compression
    - More important use case is image compression. Video compression may be too complicated but integrating a premade IP core could be possible
    - Compression is more important than decompression
    - HDMI passthrough demo from Xilinx is not as valuable as using built in IP cores from Vivado to create our own FPGA-only passthrough
- Discussion of Objectives & Requirements for 492
- Discussion of Schedules & Milestones
  - We have checked out all the hardware materials we will need and had ETG install Vitis and Vivado on the computers in the Senior Design Lab
  - We have made progress towards both the HDMI passthrough and C implementation of LZW algorithm
  - Need to finish both of these as soon as possible to better gauge the next steps in the process
  - The next most important step is to get compression to work on HDMI input data
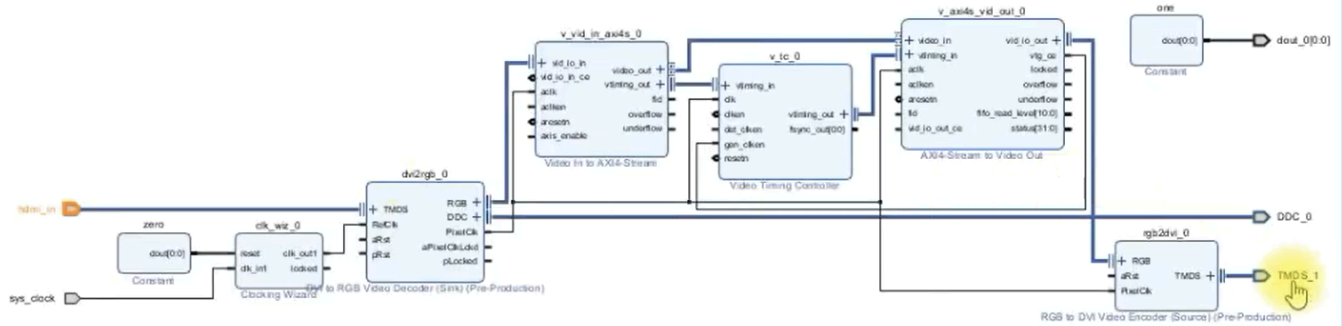
- Review of Team Process
  - The team works well together, this semester may require more meetings and more dedicated time for development
  - May need to meet with Dr. Zambreno and the client more often for guidance

Meeting Notes

- We should follow the Digilent HDMI passthrough tutorial because we are using a Digilent board.
- Need to get a power cord for the board.
- Get the compression algorithm working on MATLAB first so that we know the idea works.

Summary
SDMay-24-12 Video Compression & Decompression Pipeline on FPGA
Caleb Rock (present)
Kareem Eljaam (present)
Logan McDermott (present)
Colsen Selk (present)
Ben Meinders (present)

- *Summary of the main points discussed*
  We met with our faculty advisor (Zambreno) and gave him a status update on our project, and what our ideal next steps are. The meeting notes above summarize what the main discussion topics were. Our next steps toward the project are goals we would like to finish pretty quickly so we have some tangible

progress we can show/explain to our client, and get some feedback on where we should be focusing our time/resources.

- *List of any decisions made*
No major decisions were made. We simply discussed courses of action to take as listed below.

- *List of any actions to be taken*
(Software) – Before making an algorithm in C or some other language, benchmark LZW on MatLab to confirm that this is the algorithm we want to pursue. Should end up benchmarking a couple other algorithms to compare and contrast efficiency, and to see which will work best with our Zybo Z7 setup.

(Hardware) – Get the board plugged in at the senior design lab and get the HDMI passthrough working so video in/out is visible.

(Group) – Work through some of Logan's 488 labs

- *Next steps for the project*
The immediate next steps are described in detail in the question above. Once the algorithm is working on MATLAB, we need to figure out a more hardware friendly way to code the algorithm and implement it in hardware.