

Weekly Report

Week 10: 20/04/2015 - 24/04/2015

Work Developed

This week, the C code that runs on the ARM CPU was developed. This code operates as follows:

1. The input image is loaded into RAM, so that the BM3D system can access it.
2. The value that signals a start of the algorithm is written into the control register via the AXI Slave port on the system.
3. The CPU waits for the flag that signals new data is available in memory, and then it processes this data by returning each patch of each group to the original position in a buffer image array and the corresponding weight to a buffer weight array.
4. The CPU waits for the flag that signals that the BM3D system has finished processing all the image, and then, it acknowledges this by writing to the control register.
5. Finally, the buffer image array is divided element-wise by the buffer weight array to produce the final image, in this case, the basic estimate image.

Challenges

The main challenge in developing the C code was accessing the memory and controls registers of the system, which includes working with pointers for virtual addresses of memory that need to be translated into physical addresses.

Next Tasks

Next week, work will be focused on testing the system on the ZYNQ System on Chip.