

Weekly Report

Week 13: 11/05/2015 - 15/05/2015

Work Developed

This week, the AXI Slave memory access was validated. This means that now the system operates as follows:

1. The CPU writes in the control register to start the denoising task, and then polls the status register for data requests.
2. Data requests can be either read from RAM or write to RAM. For each read, 4 image lines are transferred, as the neighborhoods are processed in a sliding window manner. For each write, data, positions and weight information for the 16 groups (as 16 processors are being used) are transferred.
3. When a data request is needed, the CPU performs it, and writes to the control register, in order that the system can continue processing.
4. Finally, when the denoising is done, the system writes to the status register and the CPU reads this value and executes the last stage of the algorithm: the aggregation of the data in order to form the basic estimate image.

After the validation of the memory access, the image produced by the BM3D hardware implementation was still not correct, and this issue will be addressed in the following week.

Challenges

The main challenges this week were related with figuring out the problems in the system after ruling out the memory access as the cause of errors.

Next Tasks

Next week, work will be focused on debugging the algorithm core in order to produce a correct image.