The file dma_r.c describes how data is transferred from FPGA to

processing system. The basic idea of how to control DMA can be found at

Lauri's blog (http://lauri.xn--vsandi-pxa.com/hdl/zynq/xilinx-dma.html)

The dma_receive() method will transfer the data from FPGA to physcical address handle2

The datasheet of DMA can be found at

http://www.xilinx.com/support/documentation/ip_documentation/axi_dma/v7_1/pg021_axi_dma.pdf

The file_operations dma_fops and its associated functions dma_read, dma_write, dma_open, dma_release does not play any role in this file. They are only for compiling purpose and may be removed from this file. dma_init does necessary initialization of dma controller. When allocating a memory in kernel, use dma_alloc-coherent() as this file does. Don't use kmalloc(), since it will cache data between virtual addr and physical addr. dma_exit does necessary clean up. dma_receive is the function to receive data. When to_eth is equal to 1, we receive data from FPGA, and use sendskb() to send the data to Ethernet. When to_eth is equal to 0, we do nothing.

The file is compiled together with ackmod.c and dma2eth.c to form the module of receiver. Below is picture that shows the receiver's C files together with a Makefile.