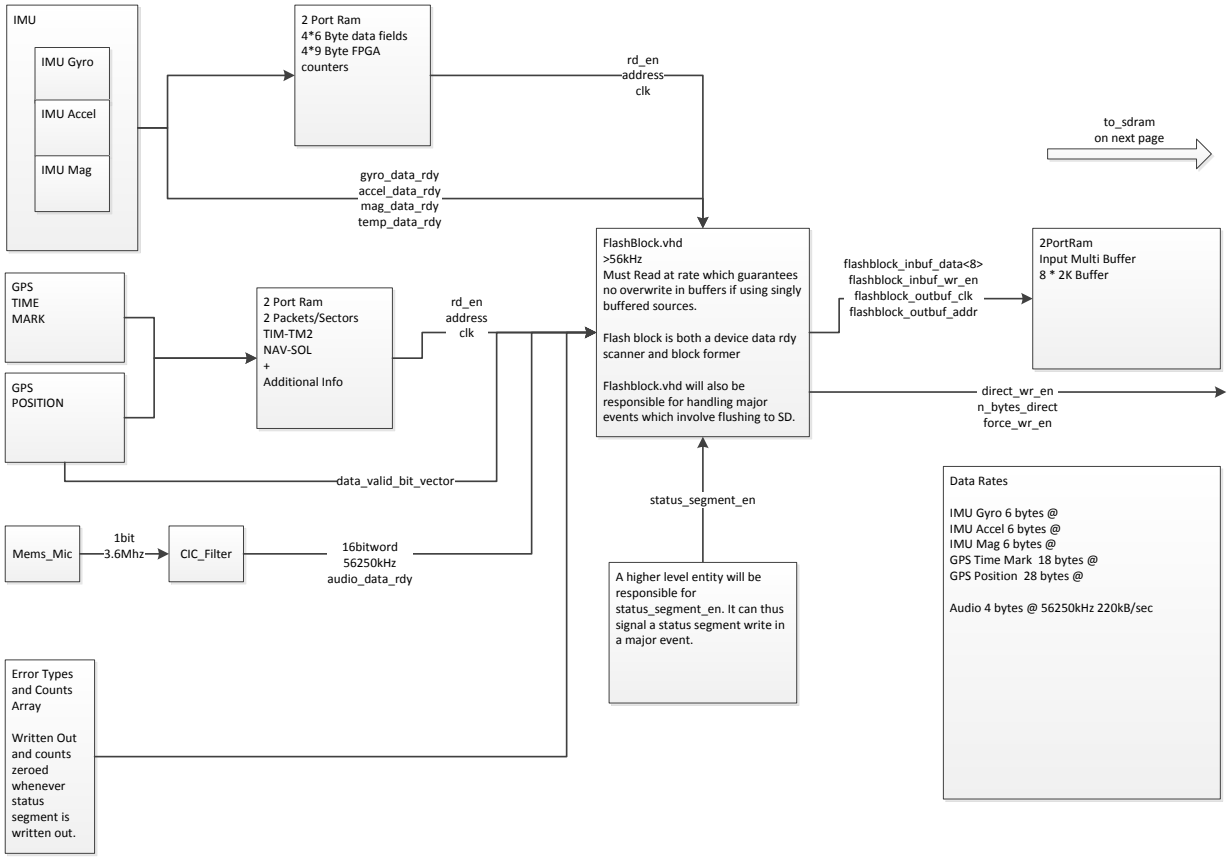
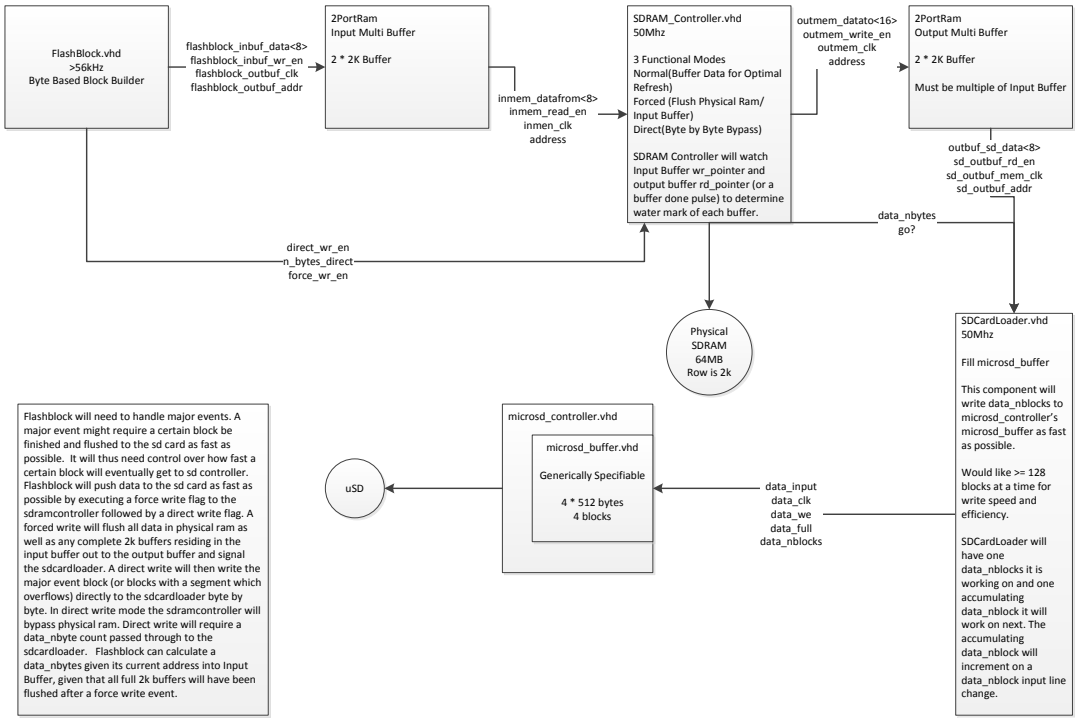
Data Assembly and Memory Flow





Buffer Addressing

IMU BUFFER
2 Port Ram
4*6 Byte data fields
4*9 Byte FPGA counters

8 Addresses
8 72 bit words
Address:Data
1 Accelerometer Word (47 downto 0) <72>
2 Gyroscope Word (47 downto 0) <72>
3 Magnetometer Word (47 downto 0) <72>
4 Temperature Word (47 downto 0) <72>
5 Accelerometer Sample FPGA Time (71 downto 0) <72>
6 Gyroscope Sample FPGA Time (71 downto 0) <72>
7 Magnetometer Sample FPGA Time (71 downto 0) <72>
8 Temperature Sample FPGA Time (71 downto 0) <72>

2PortRam
Input Multi Buffer

2 * 2K Buffer
4096 Bytes

Address : std_logic_vector(11 downto 0);

BYTE_ADDR_LEN :natural := 9;
BUFFER_ADDR_LEN :natural := 3

2 Port Ram
2 Packets/Sectors
TIM-TM2
NAV-SOL
+
Additional Info

2PortRam
Output Multi Buffer

2 * 2K Buffer

Must be multiple of Input Buffer

Address : std_logic_vector(11 downto 0);

BYTE_ADDR_LEN :natural := 9;
BUFFER_ADDR_LEN :natural := 3

No buffering for CIC Filter 16 bit word.
Simply a ready pulse 3.6Mhz wide and an associated 16 bit word.