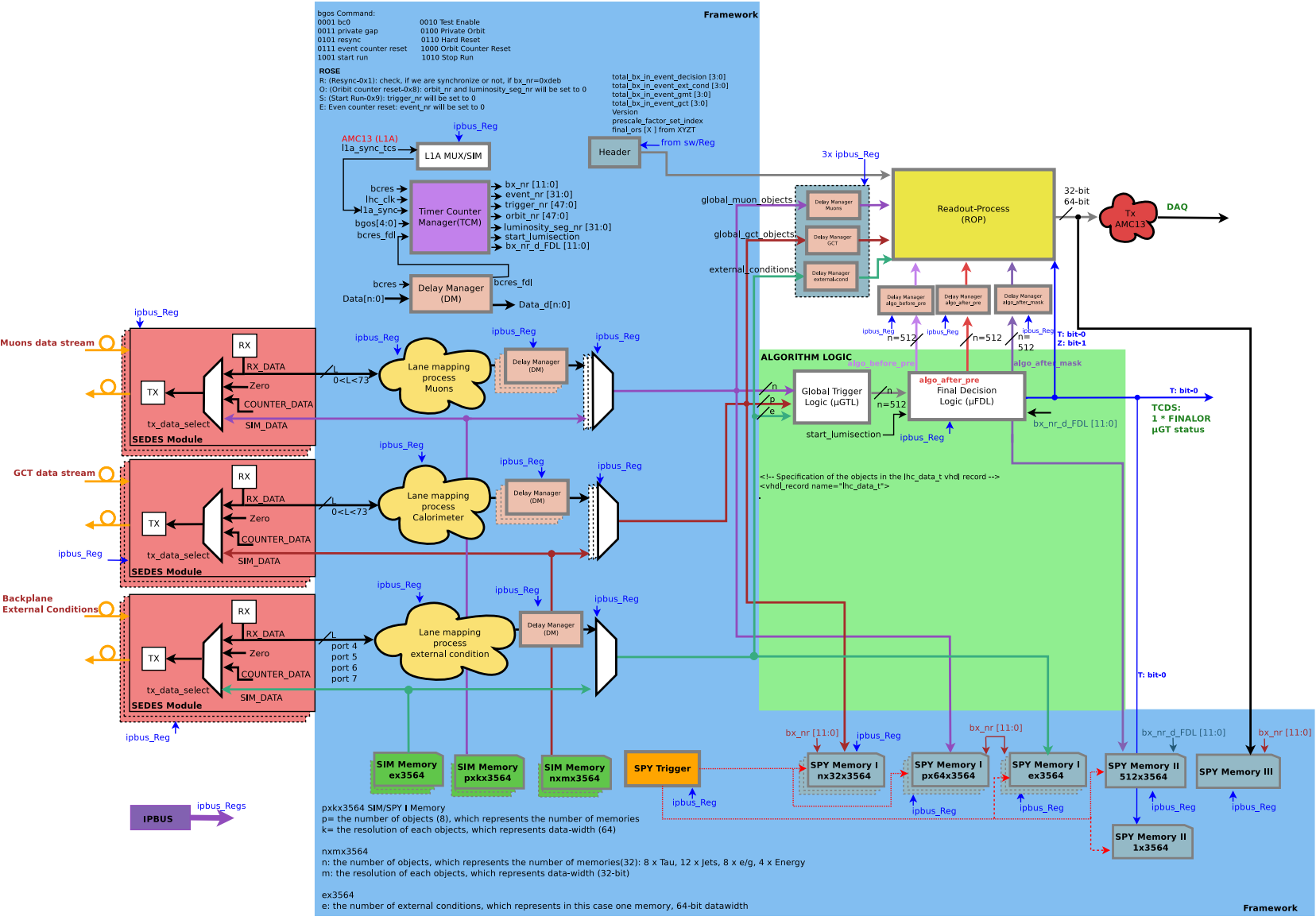
Framework
bgos Command:
0001 bc0
0011 private gap
0101 resync
0111 event counter reset
1001 start run
0010 Test Enable
0100 Private Orbit
0110 Hard Reset
1000 Orbit Counter Reset
1010 Stop Run
ROSE
R: (Resync-0x1): check, if we are synchronize or not, if bx_nr=0xdeb
O: (Oribit counter reset-0x8): orbit_nr and luminosity_seg_nr will be set to 0
S: (Start Run-0x9): trigger_nr will be set to 0
E: Even counter reset: event_nr will be set to 0
total_bx_in_event_decision [3:0]
total_bx_in_event_ext_cond [3:0]
total_bx_in_event_gmt [3:0]
total_bx_in_event_gct [3:0]
Version
prescale_factor_set_index
final_ors [X] from XYZT
AMC13 (L1A)
l1a_sync_tcs
ipbus_Reg
L1A MUX/SIM
Header
from sw/Reg
3x ipbus_Reg
bcres
lhc_clk
l1a_sync
bgos[4:0]
bcres_fdl
Timer Counter Manager(TCM)
bx_nr [11:0]
event_nr [31:0]
trigger_nr [47:0]
orbit_nr [47:0]
luminosity_seg_nr [31:0]
start_lumisection
bx_nr_d_FDL [11:0]
bcres
Data[n:0]
Delay Manager (DM)
bcres_fdl
Data_d[n:0]
global_muon_objects
global_gct_objects
external_conditions
Delay Manager Muons
Delay Manager GCT
Delay Manager external-cond
Readout-Process (ROP)
32-bit
64-bit
Tx AMC13
DAQ
Delay Manager algo_before_pre
Delay Manager algo_after_pre
Delay Manager algo_after_mask
n=512
T: bit-0
Z: bit-1
ALGORITHM LOGIC
algo_before_pre
algo_after_mask
Global Trigger Logic (μGTL)
algo_after_pre
Final Decision Logic (μFDL)
start_lumisection
bx_nr_d_FDL [11:0]
TCDS:
1 * FINALOR
μGT status
<!-- Specification of the objects in the lhc_data_t vhdl record -->
<vhdl_record name="lhc_data_t">
Muons data stream
GCT data stream
Backplane
External Conditions
RX
TX
RX_DATA
Zero
COUNTER_DATA
SIM_DATA
tx_data_select
SEDES Module
0<L<73
Lane mapping process Muons
Lane mapping process Calorimeter
Lane mapping process external condition
port 4
port 5
port 6
port 7
SIM Memory ex3564
SIM Memory pxkx3564
SIM Memory nxmx3564
SPY Trigger
SPY Memory I nx32x3564
SPY Memory I px64x3564
SPY Memory I ex3564
SPY Memory II 512x3564
SPY Memory III
SPY Memory II 1x3564
bx_nr [11:0]
bx_nr_d_FDL [11:0]
IPBUS
ipbus_Regs
pxkx3564 SIM/SPY I Memory
p= the number of objects (8), which represents the number of memories
k= the resolution of each objects, which represents data-width (64)
nxmx3564
n: the number of objects, which represents the number of memories(32): 8 x Tau, 12 x Jets, 8 x e/g, 4 x Energy
m: the resolution of each objects, which represents data-width (32-bit)
ex3564
e: the number of external conditions, which represents in this case one memory, 64-bit datawidth
Framework