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`include "uvm_macros.svh"

module svid_packet_mon_wrapper(
    svid_packet_mon_intf mon_intf,
    input clk
);

import uvm_svid_monitor_package::*;

wire [7:0] tx_frame_0;
wire [7:0] tx_frame_1;
wire [7:0] tx_frame_2;
wire trigger;

svid_packet_intf i_svid_packet_intf(clk);

assign tx_frame_0 = mon_intf.tb.tx_frame_0;
assign tx_frame_1 = mon_intf.tb.tx_frame_1;
assign tx_frame_2 = mon_intf.tb.tx_frame_2;
assign trigger    = mon_intf.tb.trigger;

assign i_svid_packet_intf.start_frame    = tx_frame_2[7:5];
assign i_svid_packet_intf.addr          = tx_frame_2[4:1];
assign i_svid_packet_intf.command       =
{tx_frame_2[0],tx_frame_1[7:4]};
assign i_svid_packet_intf.payload       =
{tx_frame_1[3:0],tx_frame_0[7:4]};
assign i_svid_packet_intf.parity        = tx_frame_0[3];
assign i_svid_packet_intf.end_frame     = tx_frame_0[2:0];
assign i_svid_packet_intf.trigger       = trigger;

wire      computed_parity = tx_frame_2[4] ^ tx_frame_2[3] ^
tx_frame_2[2] ^ tx_frame_2[1] ^ tx_frame_2[0] ^
tx_frame_1[7] ^ tx_frame_1[6] ^
tx_frame_1[5] ^ tx_frame_1[4] ^
tx_frame_1[3] ^ tx_frame_1[2] ^
tx_frame_1[1] ^ tx_frame_1[0] ^
tx_frame_0[7] ^ tx_frame_0[6] ^
tx_frame_0[5] ^ tx_frame_0[4];

//run test method for the monitor
class my_test extends uvm_test;
    `uvm_component_utils( my_test )

    //instantiate the packet monitor
    svid_packet_checking_env svid_pc_env;
    virtual svid_packet_intf svid_pc_intf;

    function new( string name, uvm_component parent );

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        super.new( name, parent );
    endfunction: new

    function void build_phase(uvm_phase phase);
        super.build_phase( phase );
        i_svid_packet_checking_env =
svid_packet_checking_env::type_id::create( .name( "svid_environment" ),
.parent( this ) );
    endfunction

    function void connect_phase(uvm_phase phase);
        super.connect_phase( phase );
        svid_pc_env.ingress_intf = svid_pc_intf;
    endfunction //

    function void run_phase(uvm_phase phase);
        //What needs to go in here ?????
        //We are not driving just monitoring ???
    endfunction

endclass // my_test

////////////////////////////////////
//
////////////////////////////////////
initial begin
    //????????????????????????????????
    //What goes in here to start up the packet checking environment
    ???
    //How does the packet checking environment connect to
    i_svid_packet_intf ??
end

endmodule // svid_packet_mon_wrapper

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