

- ***mpc_alufunc_e***.

SOLUTION:

- ***mpc_alufunc_e***, is computed within module *m14k_mpc_dec*. Note that, for special logic instructions (for which ***mpc_ir_e***[5]=1):

mpc_alufunc_e=***mpc_ir_e***[1:0].

According to Table A.3 in document “MIPS Architecture For Programmers Volume II-A: The MIPS32 Instruction Set (MD00086)”:

- ***mpc_ir_e***[1:0]=00 for an AND instruction.
- ***mpc_ir_e***[1:0]=01 for an OR instruction.
- ***mpc_ir_e***[1:0]=10 for an XOR instruction.
- ***mpc_ir_e***[1:0]=11 for an NOR instruction.

which is perfectly coherent with multiplexer “_logic_out_e_31_0_” in Figure 14.

- ***mpc_sellogic_m***.

SOLUTION:

- ***mpc_sellogic_m*** is computed within module *m14k_mpc_ctl*. This signal is registered from the E-Stage through the Pipeline Registers (***ie_pipe_in***[`M14K_IE_SELLOG] → ***ie_pipe_out***[`M14K_IE_SELLOG]). It comes from signal ***sel_logic_e***, computed within module *m14k_mpc_dec*. This signal is 1 for special logic instructions (***mpc_ir_e***[5:2] == 4'b100_1), and 0 for arithmetic instructions, which is perfectly coherent with multiplexer “_edp_alu_m_31_0_” in Figure 14.