Grupo: Los futuros jalados

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Cycle	reset	PC	Instr	SrcA	SrcB	Branch	ALUResult	ALUFlags[NZC V]	CondEx	WriteData	MemWrite	ReadData
1	1	00	SUB R0, R15, R15	8	0	0	0	?	1	8	0	X
			(E04F0 00F)									
2	0	04	ADD R2, R0, #5 (E2802 005)	0	0	0	5	?	1	X	0	X
3	0	08	ADD R3, R0, #12 (E2803 00C)	0	С	0	С	?	1	X	0	X
4	0	0C	SUB R7, R3, #9 (E2437 009)	С	9	0	3	?	1	X	0	X
5	0	10	ORR R4, R7,	3	5	0	7	0	1	5	0	X

			R2 (E1874 002)									
6	0	14	AND R5, R3, R4 (E0035 004)	С	7	0	4	0	1	7	0	Х
7	0	18	ADD R5, R5, R4 (E0855 004)	4	7	0	В	?	1	7	0	Х
8	0	1C	SUBS R8, R5, R7 (E0558 007)	В	3	0	8	?	1	3	0	Х
9	0	20	BEQ END (0A000 00C)	28	30	1	58	?	0	0	0	Х
10	0	24	SUBS R8, R3, R4 (E0538 004)	С	7	0	5	?	1	7	0	Х
11	0	28	BGE AROU ND (AA000 000)	30	0	1	30	?	1	0	0	Х

12	0	2C	ADD R5, R0, #0 (E2805 000)									
13	0	30	AROU ND SUBS R8, R7, R2 (E0578 002)	3	5	0	FFFFFF E	?	1	5	0	X
14	0	34	ADDLT R7, R5, #1 (B2857 001)	В	1	0	С	?	1	x	0	Х
15	0	38	SUB R7, R7, R2 (E0477 002)	С	5	0	7	?	1	5	0	Х
16	0	3C	STR R7, [R3, #84] (E5837 054)	С	54	0	60	?	1	7	1	Х
17	0	40	LDR R2, [R0, #96] (E5902 060)	0	60	0	60	?	1	0	0	7

19	0	44	ADD R15, R15, R0 (E08FF 000)	4C	0	0	4C	?	1	0	0	Х
19	0	48	ADD R2, R0, #14 (E2802 00E)					?				
20	0	4C	B END (EA000 001)	54	4	1	58	?	1	Х	0	Х
21	0	50	ADD R2, R0, #13 (E2802 00D)					?				
22	0	54	ADD R2, R0, #10 (E2802 00A)					?				
23	0	58	END STR R2, [R0, #100] (E5802 064)	0	64	0	64	?	1	7	1	X

2. An image of the simulation waveforms showing correct operation of the processor. Does it write the

correct value to address 100?

Sí escribe los valores correctos, en la última instrucción se cumple:

58 END STR R2, [R0,
$$\#100$$
]; mem[100] = 7

Lo cual está escrito en el libro. Para comprobar que el resultado es el correcto, mostraremos las siguientes capturas de pantalla del waveform a través de IcariusVerilog y GTKwave.

Simulation considering only the 8 signals



Signals	Waves										
Time	1.	10 ns	120 ns 13	0 ns	140 ns 1	50 ns :	160 ns 1	.70 ns 1	80 ns	190 ns 2	200 ns
c1k=1											
reset =0											
PC[31:0] =00000010	00000020	00000024	00000028	00000030	00000034	00000038	0000003C	00000040	00000044	0000004C	000000
Instr[31:0] =E1874002	0A00000C	E0538004	AA000000	E0578002	B2857001	E0477002	E5837054	E5902060	EOSFFOOO	EA000001	E58020
Result[31:0] =00000007	00000058	00000005	00000030	FFFFFFFE	000000C	00000007	00000060		0000004C	00000058	000000
WriteData[31:0] =00000005	XXXXXXX	00000007	00000000	00000005	XXXXXXX	00000005	00000007	00000000		XXXXXXXX	0000000
MemWrite =0											
ReadData[31:0] =xxxxxxxx	XXXXXXX							00000007	XXXXXXX		
1											

Vemos que el resultado final es el correcto.