

TRACCIA 18/12/2006

Esercizio 2

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μ1 IRX → MAR, 4 → T1;
   if OR(T1) == 1 then
μ2  INCR(MAR) → MAR, M[MAR] → MBR;
μ3  MBR → T2, DECR(MAR) → MAR;
μ4  M[MAR] → MBR;
μ5  MBR → A;
μ6  MBR → B;
μ7  A+B → B;
μ8  T2 → A;
μ9  A-B → AC;
   if AC31 == 0 then
μ10 DECR(T1) → T1, INCR(MAR) → MAR, go to C;
   else
μ11  0 → AC;
   end
   else
μ12  1 → AC;

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K'_{T1}	K^o_{T1}	OPERAZIONE
1	1	Inserisce 4 nel registro

IMPLEMENTAZIONI:

- Segnale $k't1$ $k^o t1 = 11$ inserisce 4 in T1
- Doppio segnale K del mar per incrementare e decrementare
- Segnale beta per il controllo del bit più significativo su AC
- Aggiunta segnali $K'ac$ $k^o ac$ all'accumulatore

K'_{AC}	K^o_{AC}	OPERAZIONE
0	0	Non modifica il contenuto
1	0	Inserisce 1
0	1	Inserisce 0
1	1	Non valida

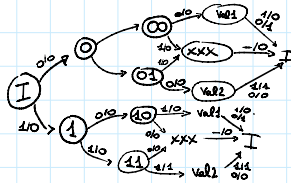
K'_{MAR}	K^o_{MAR}	OPERAZIONE
0	0	Non modifica il contenuto
1	0	Incrementa il valore
0	1	Decrementa il valore
1	1	Non valida

F	A _{IR}	Z _{IR}	A _{PC}	K _{PC}	A _{AC}	A _{MAR}	A _{MBR}	S	L	E	A _A	A _B	AL ₀	AL ₁	AL ₂	A _{T1}	K ^o _{T1}	K' _{T1}	A _{T2}	K ^o _{T2}	K' _{T2}	A _{T3}	K ^o _{T3}	K' _{T3}	K' _{MAR}	K ^o _{MAR}	K' _{AC}	K ^o _{AC}	Bus Indirizzi		Bus Dati		
																													x ₂ x ₁ x ₀	y ₁ y ₁ y ₀	x ₂ x ₀ x ₀	y ₃ y ₂ y ₁ y ₀	
μ1	0	-	0	-	0	1	0	0	0	-	0	0	-	-	-	1	1	1	0	-	-	0	-	-	-	0	0	-		001	001	---	----
μ2	0	-	0	-	0	1	1	0	1	-	0	0	-	-	-	0	-	-	0	-	-	0	-	-	1	0	-	-		---	---	---	----
μ3	0	-	0	-	0	1	0	0	0	-	0	0	-	-	-	0	-	-	1	0	0	0	-	-	0	1	-	-		---	---	001	1000
μ4	0	-	0	-	0	0	1	0	1	-	0	0	-	-	-	0	-	-	0	-	-	0	-	-	-	-	-	-		---	---	---	----
μ5	0	-	0	-	0	0	0	0	0	-	1	0	-	-	-	0	-	-	0	-	-	0	-	-	-	-	-	-		---	---	001	0101
μ6	0	-	0	-	0	0	0	0	0	-	0	1	-	-	-	0	-	-	0	-	-	0	-	-	-	-	-	-		---	---	001	0110
μ7	0	-	0	-	0	0	0	0	0	-	0	1	1	0	0	0	-	-	0	-	-	0	-	-	-	-	-	-		---	---	100	0110
μ8	0	-	0	-	0	0	0	0	0	-	1	0	-	-	-	0	-	-	0	-	-	0	-	-	-	-	-	-		---	---	110	0101
μ9	0	-	0	-	1	0	0	0	0	-	0	0	1	1	1	0	-	-	0	-	-	0	-	-	-	-	-	-		---	---	100	0100
μ10	0	-	0	-	0	1	0	0	0	-	0	0	-	-	-	1	1	0	0	-	-	0	-	-	1	0	-	-		---	---	---	----
μ11	1	1	0	-	1	0	0	0	0	-	0	0	-	-	-	0	-	-	0	-	-	0	-	-	-	-	0	1		---	---	---	----
μ12	1	1	0	-	0	0	0	0	0	-	0	0	-	-	-	0	-	-	0	-	-	0	-	-	-	-	-	-		---	---	---	----
μ13																																	
μ14																																	
μ15																																	

I	OR(T1)	AC ₃₁	$y_3 y_2 y_1 y_0$	$y'_3 y'_2 y'_1 y'_0$	Segnali α	Z_{IR}
COP8	-	-	0000	0001	μ1	0
COP8	1	-	0001	0010	μ2	0
COP8	1	-	0010	0011	μ3	0
COP8	1	-	0011	0100	μ4	0
COP8	1	-	0100	0101	μ6	0
COP8	1	-	0101	0110	μ7	0
COP8	1	-	0110	0111	μ8	0

COP8	1	-	0111	1000	$\mu 9$	0
COP8	1	0	1000	1001	$\mu 10$	0
COP8	1	1	1000	0000	$\mu 11$	1
COP8	0	-	0001	0000	$\mu 12$	1

Esercizio 1



STATO	$y_3 y_2 y_1 y_0$	\bar{y}_0	1
I	0 0 0 0	0001.0	0010.0
O	0 0 0 1	0011.0	0100.0
1	0 0 1 0	0101.0	0110.0
00	0 0 1 1	0111.0	1000.0
01	0 1 0 0	1001.0	1000.0
10	0 1 0 1	1000.0	0111.0
11	0 1 1 0	1000.0	1001.0
Val1	0 1 1 1	0000.1	0000.0
Xxx	1 0 0 0	0000.0	0000.0
Val2	1 0 0 1	0000.0	0000.1
	1 0 1 0		
	1 0 1 1		
	1 1 0 0		
	1 1 0 1		
	1 1 1 0		
	1 1 1 1		

$y_3' y_2' y_1' y_0', z$

$y_3 y_2 y_1 y_0$	00	01	11	10
00				
01	1	1		1
11	x	x	x	x
10			x	x

$y_3 y_2 y_1 y_0$	00	01	11	10
00				
01	1			1
11	x	x	x	x
10			x	x

$$y_3' = \bar{y}_1 y_3 \bar{x} + \bar{y}_0 y_3 \bar{x} + \bar{y}_1 y_3 x + y_0 y_1 \bar{y}_3 x$$

$y_3 y_2 y_1 y_0$	00	01	11	10
00				
01			1	1
11	x	x	x	x
10			x	x

$y_3 y_2 y_1 y_0$	00	01	11	10
00				
01	1			1
11	x	x	x	x
10			x	x

$$y_2' = y_0 y_3 \bar{x} + \bar{y}_0 y_1 \bar{y}_2 x + y_0 \bar{y}_1 \bar{y}_2 x$$

$y_3 y_2 y_1 y_0$	00	01	11	10
00	1	1		
01				
11	x	x	x	x
10			x	x

$y_3 y_2 y_1 y_0$	00	01	11	10
00	1			1
01		1		
11	x	x	x	x
10			x	x

$$y_1' = y_1 \bar{y}_2 \bar{y}_3 \bar{x} + \bar{y}_1 \bar{y}_2 \bar{y}_3 \bar{x} + \bar{y}_0 y_1 y_3 x$$

$y_3 y_2 y_1 y_0$	00	01	11	10
00	1	1	1	1
01	1			
11	x	x	x	x
10			x	x

$y_3 y_2 y_1 y_0$	00	01	11	10
00				
01	1		1	
11	x	x	x	x
10			x	x

$$y_0' = \bar{y}_2 \bar{y}_3 \bar{x} + \bar{y}_0 \bar{y}_1 y_3 \bar{x} + \bar{y}_0 y_1 y_3 x + y_0 \bar{y}_1 y_3 x$$

$y_3 y_2 y_1 y_0$	00	01	11	10
00				
01			1	
11	x	x	x	x
10			x	x

$y_3 y_2 y_1 y_0$	00	01	11	10
00				
01			x	x
11	x	x	x	x
10			1	x

$$z = y_0 y_1 y_3 \bar{x} + y_1 y_2 x$$