1° prova intermedio 2009/2010

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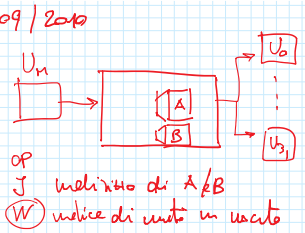


OP = 0

A[J] = B[J]

$A[J] + B[J]/64$

$A[J] - B[J] \% 128$

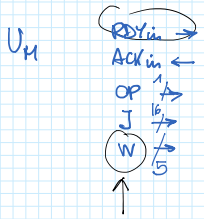
OP = 1

A, B 64k

32 bit

A <-> B

$\forall i$: A[i] <-> B[i]



U_i

$\rightarrow RDY_i$

$\leftarrow ACK_i$

$\rightarrow OUT_i$ (32)

$\forall i \in [0, 31]$

$\emptyset$. $(RDY_{in}^{OP} = \emptyset)$, map, $\emptyset$

(=10)

RDY_{in}, OP, zero (A[J] - B[J]) $\rightarrow OUT_i$

RDY_{in}, OP, zero (A[J] - B[J]), ACK_i

$\rightarrow$ $\emptyset$. $(RDY_{in}, OP, zero(A[J]-B[J]), ACK_i := 0 ---)$ map, $\emptyset$ attesa di U_M

(=1001) $(A[J] \oplus B[J])/64) \rightarrow A[J]$,

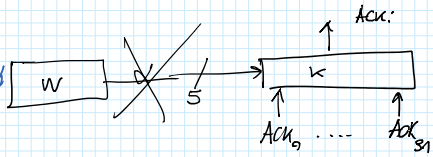
$(A[J] + B[J]/64) \rightarrow OUT_i$, β_{out}

reset RDY_{in}, set ACK_{in}, set RDY_i, reset ACK_i, $\emptyset$

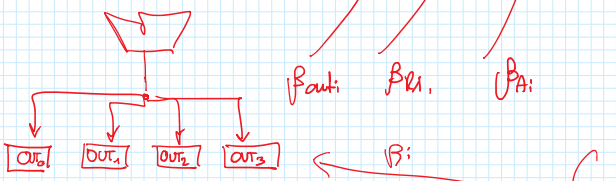
$\rightarrow$ (=1011) $(A[J] \oplus B[J] \% 128) \rightarrow A[J]$

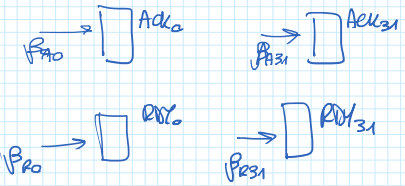
$\rightarrow OUT_i$

reset RDY_{in}, set ACK_{in}, set RDY_i, reset ACK_i, $\emptyset$

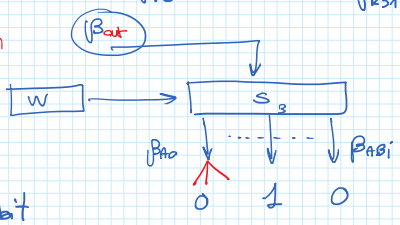


ok come via di condizionamento (soddisfo la condizione di Connessa.)





β:



(=100-0) map, $\emptyset$ attesa di U_i

(=11--) $0 \rightarrow I$, 1

1. $(I_0 = 0)$ $A[I] \rightarrow B[I]$, $B[I] \rightarrow A[I]$,

$I+1 \rightarrow I$, 1

(=1) set ACK_{in}, reset RDY_{in}, $\emptyset$

map

I = 17 bit

Im

Vale la condizione di correttezza ?

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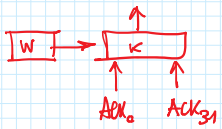
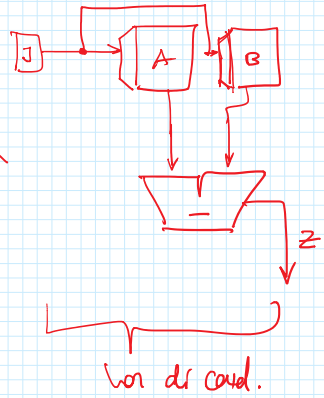
occorre stabilire che:

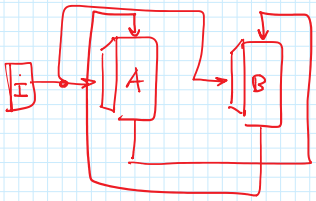
- ✓ RDYin
- reg da 1 bit ✓ OP
- ? zero (A[J] - B[J])
- ✓ ACKi

} siano tutti valori che dipendono dal solo stato interno della Fo

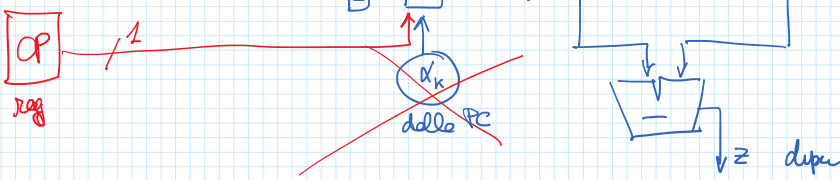




A[I] → B[I], B[I] → A[I]



Sol 1



dipende dall'α! Viola la condizione di correttezza!

altra soluzione **Sol 2**

↳ zero (A[J] − B[J]) → Z, 1

1. (Z = 0) - - -
   (Z = 1) - - -

Ø. (RDY, OP = Ø −) nop
(= 1 1) Ø → I, 1
(= 1 0) zero (A[J] − B[J]) → Z, 2

1. (I_0 = 0) A[I] → B[I], B[I] → A[I], I+1 → I, 1
(= 1) set ACKin, reset RDYin, Ø

2. (Z, ACKi = 01) A[J] − B[J] % 128 → A[J] → OUTi, set ACKin, set RDYi, reset RDYin, reset ACKi, Ø
(= 1 1) A[J] + B[J]/64 - - - - - - - - , Ø
(= - 0) nop, 2

memorie a doppia porta

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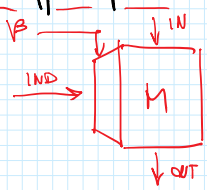
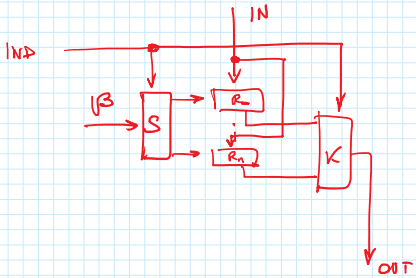
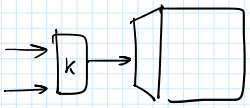
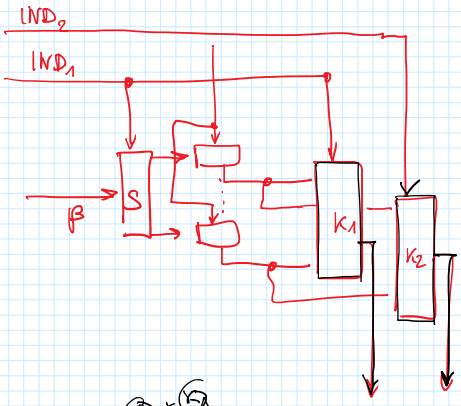
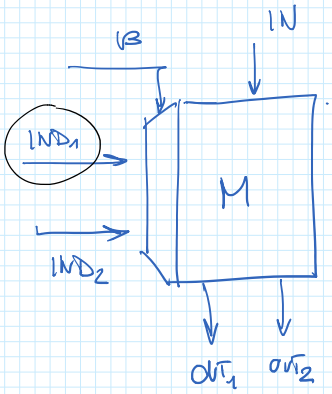


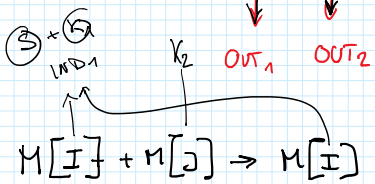


Memoria standard





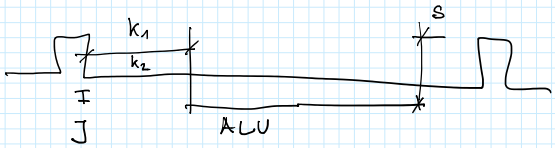




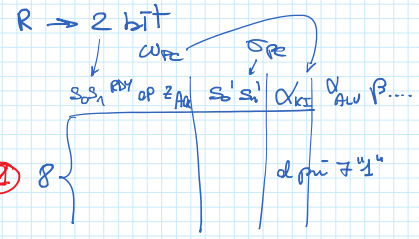
M[I] + M[J] → M[I]

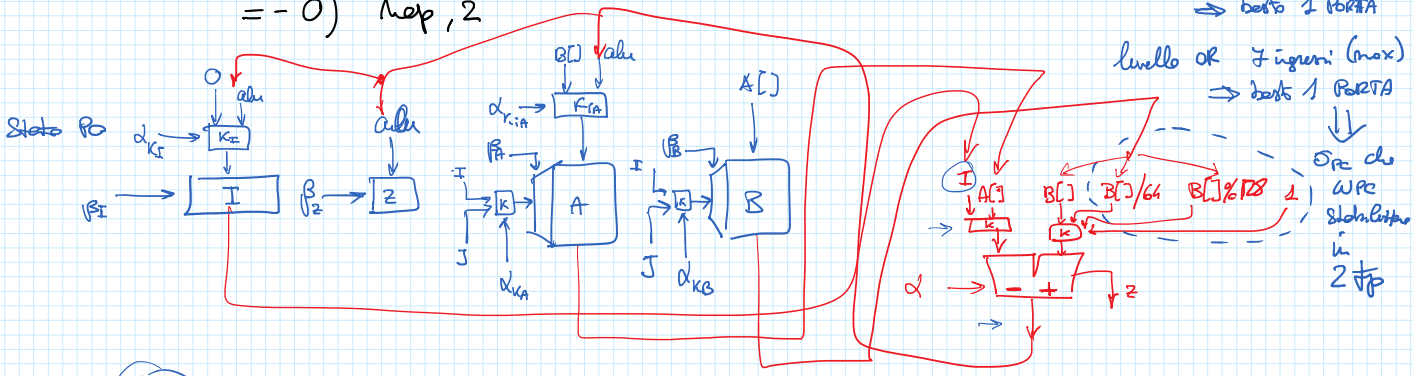
Con 3 indirizzi (1 × K1, 1 × K2, 1 × S)

M[I] + M[J] → M[K]



0. (RDY, OP = 0–) nop
   (= 11) 0 → I, 1
   (= 10) zero(A[J] − B[J]) → Z, 2 ①
1. (I_0 = 0) A[I] → B[I], B[I] → A[I], I+1 → I, 1 ②
   (= 1) set ACKin, reset RDYin, 0
2. (Z, ACKi = 01) A[J] − B[J]%128 → A[J] → OUTi, set ACKin, set RDYi, reset RDYin, reset ACKi, 0 ③
   (= 11) A[J] + B[J]/64 . . . . . , 0 ④
   = − 0) nop, 2





ω_{PO} σ_{PO}

RDY, OP, Z ⇒ ϕ t_p

ACKi ⇒ t_{K32} } ?

$T_{\omega PO} = t_{K32}$

$T_{\sigma PO} = t_A + t_K + t_{ALU}$?