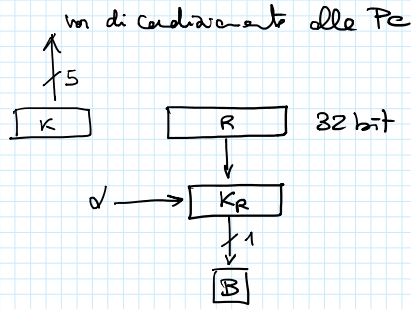
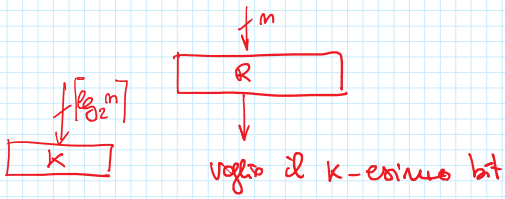
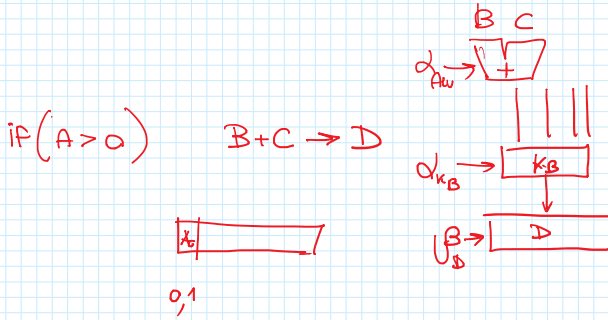
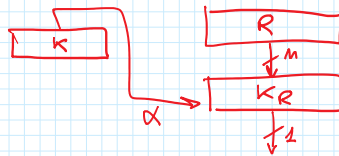


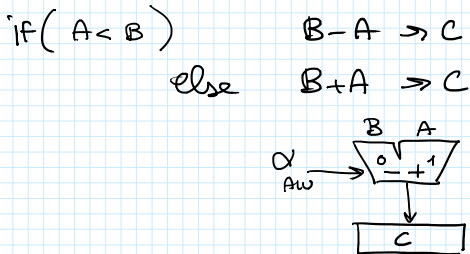
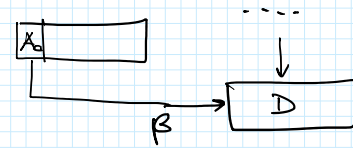
determinare "cosa è" lo Po (come modificano lo stato Po)



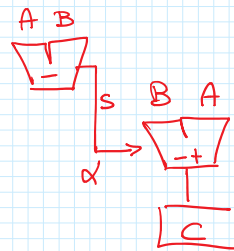
$(k=00000)$   
 $R[0] \rightarrow B$   
 $(k=00001)$   
 $R[1] \rightarrow B$   
 ...

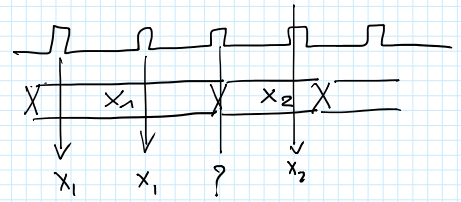
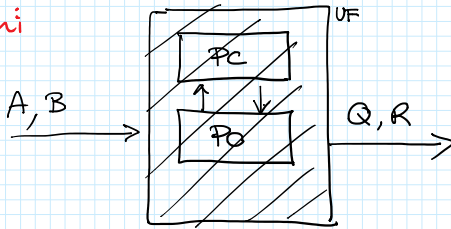


$(A_0=0)$  B + C → D, ...  
 $(=1)$  ----, ...



$(seg(A-B)=0)$  B - A → C, x  
 $(=1)$  B + A → C, y



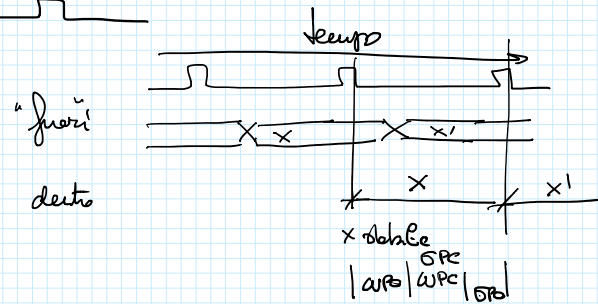
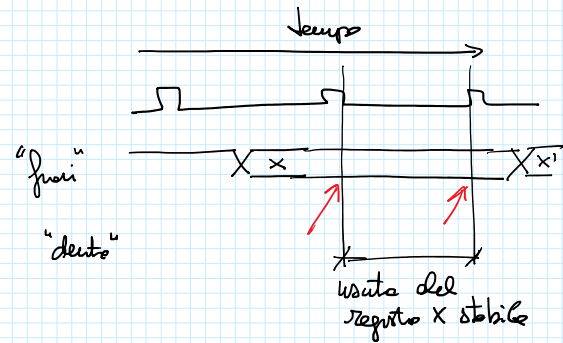
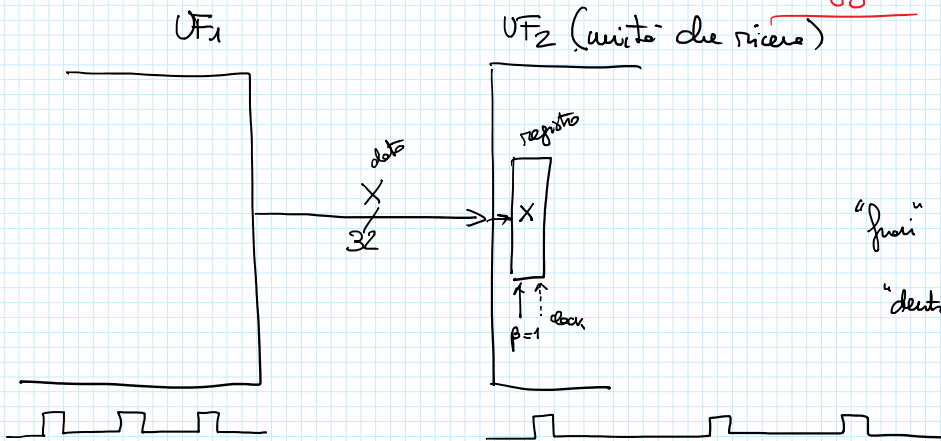
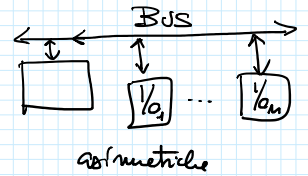
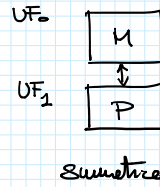
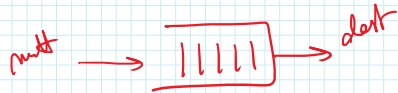
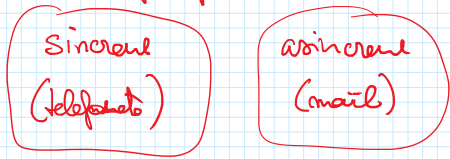


→ simmetriche/asimmetriche  
 → sincrona/asincrona

quanti spediscono/ricevono

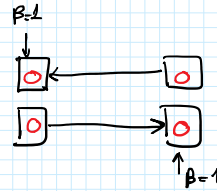
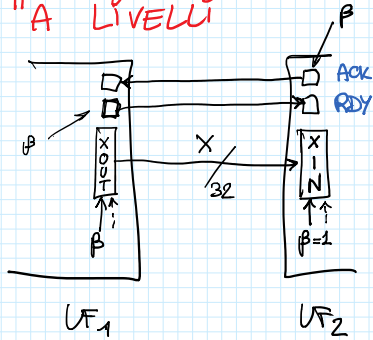
simmetrica 1-1  
 asimmetrica N-1 (N-M)  
 1-N (M-N)

due tipi di protocollo di comunicazione utilizzano del punto di vista dello **tempo**

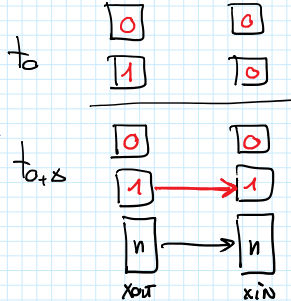


# Protocolli di comunicazione

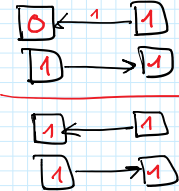
## "A LIVELLI"



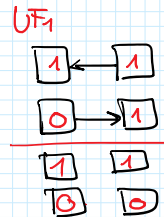
1)  $UF_1$  scrive XOUT &



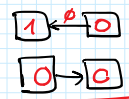
2)  $UF_2$  lavora con XIN e comunica che lo finito scrivendo 1 nel proprio reg di out 1 bit



3) 4) mi ripeto nelle condizioni iniziali



$UF_2$

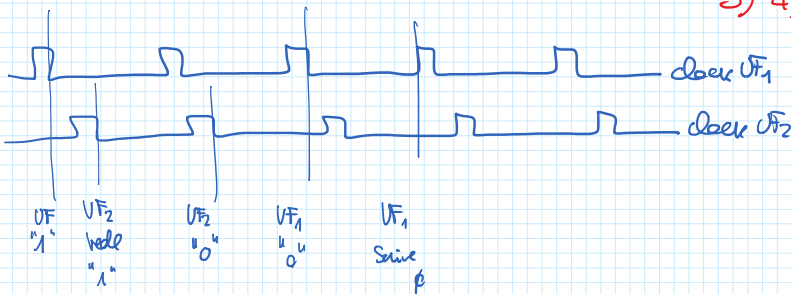
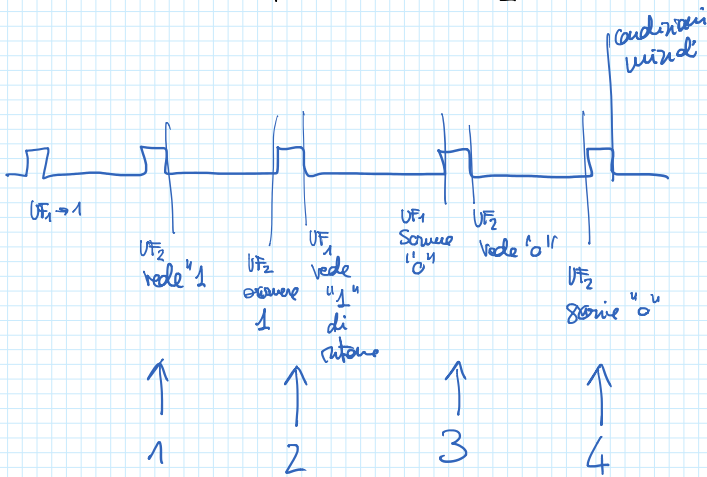


$UF_1$  vede  
 $\downarrow$   
 per ricominciare ad eseguire la comunicazione

$0 \leftarrow 0$   
 $0 \rightarrow 0$

$0 \leftarrow 0$   
 $1 \rightarrow 1$   
 $1 \leftarrow 1$   
 $1 \rightarrow 1$

$1 \leftarrow 1$   
 $0 \rightarrow 0$



$UF_2$  (che riceve)

$\emptyset$ . ( $RDY = \emptyset$ ) map,  $\emptyset$   
 (=1)  $A \rightarrow TEMP_A, B \rightarrow TEMP_B, 1 \rightarrow ACK, 1$

1. ( $RDY = 1$ ) map, 1  
 (=  $\emptyset$ )  $\emptyset \rightarrow ACK, \dots$  proseguo nel lavoro

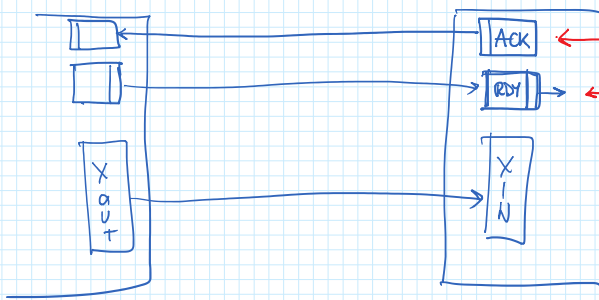
# protocollo di comunicazione a "TRANSIZIONI di LIVELLI"

## il protocollo a livelli

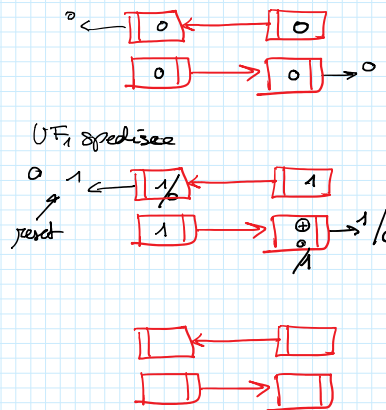
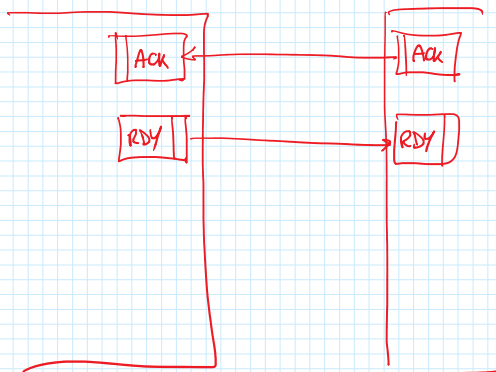
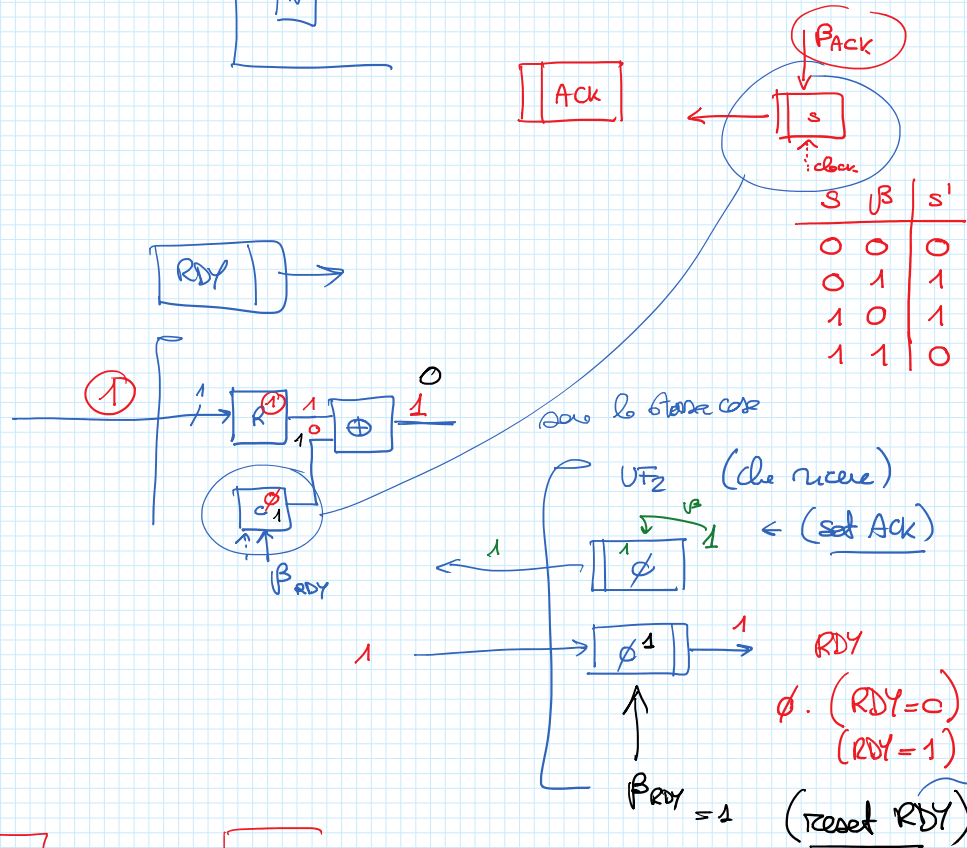
che riceve:

- 0. (RDY = 0) nop,  $\phi$   
 (=1) XIN  $\rightarrow$  ..., 1  $\rightarrow$  Ack, 1
- 1. (RDY = 1) nop, 1  
 (=0) XIN  $\rightarrow$  ...,  $\phi \rightarrow$  Ack, ...

## indicatori a transizione di livello



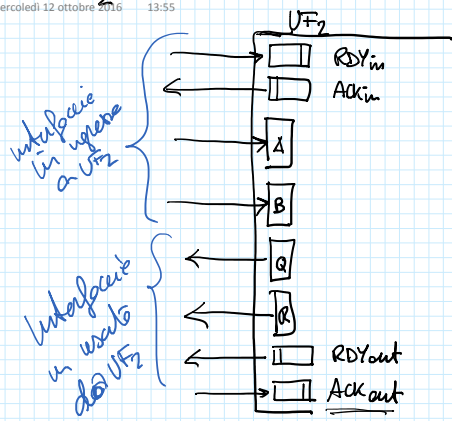
contatore modulo 2 (BAck)  
 risultato di un comparatore fra il contatore modulo 2 e un registro in ingresso (PRDY)



simmetrica (1-1)

asimmetrica (da 1 portuale)

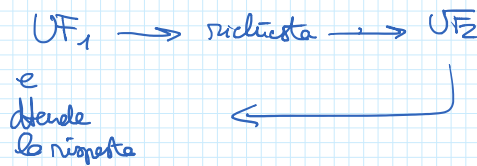
divisore di interi



$$Q=0 \quad \left. \begin{array}{l} A > B \\ \text{while } (A-B > 0) \end{array} \right\} A-B \rightarrow A, Q+1 \rightarrow Q; \\ R=A;$$

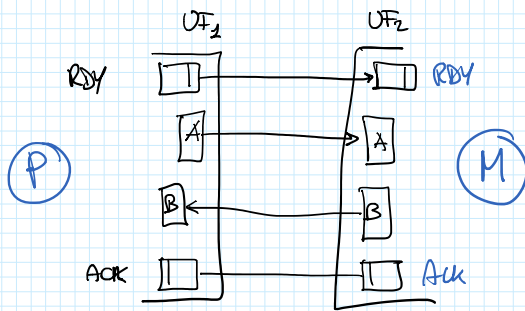
- $\emptyset$ . ( $RDY_{in} = \emptyset$ ) nop,  $\emptyset$   
 (=1)  $A \rightarrow TEMP_A, B \rightarrow TEMP_B, \text{ set } ACK_{in}, \text{ reset } RDY_{in}, 1$
- $\emptyset \rightarrow Q, 2$
  - (seqo ( $TEMP_A - TEMP_B$ ),  $ACK_{out} = \emptyset -$ )  
 $Q+1 \rightarrow Q, TEMP_A - TEMP_B \rightarrow TEMP_A, 2$ .
- (=11)  $TEMP_A \rightarrow R, \text{ set } RDY_{out}, \text{ reset } ACK_{out}, \emptyset$   
 $TEMP_Q \rightarrow Q$

Protocollo



Protocollo A  
DOMANDA/RISPOSTA

↓  
 BASTA 1 coppia di  
 indicatori e  
 trasmissione di  
 livelli



- $\emptyset$ .  $\dots \rightarrow A, \text{ set } RDY, 1$   
 1. ( $ACK=0$ ) nop, 1  
 (=1)  $B \rightarrow \dots, \text{ reset } ACK$   
 UF<sub>1</sub>

- UF<sub>2</sub>  
 $\emptyset$ . ( $RDY=0$ ) nop,  $\emptyset$   
 (=1)  $A \rightarrow \dots, 1$   
 ⋮  
 i.  $\dots \rightarrow B, \text{ set } ACK, \text{ reset } RDY, \emptyset$

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mercoledì 12 ottobre 2016 13:55

7

mercoledì 12 ottobre 2016 13:55







