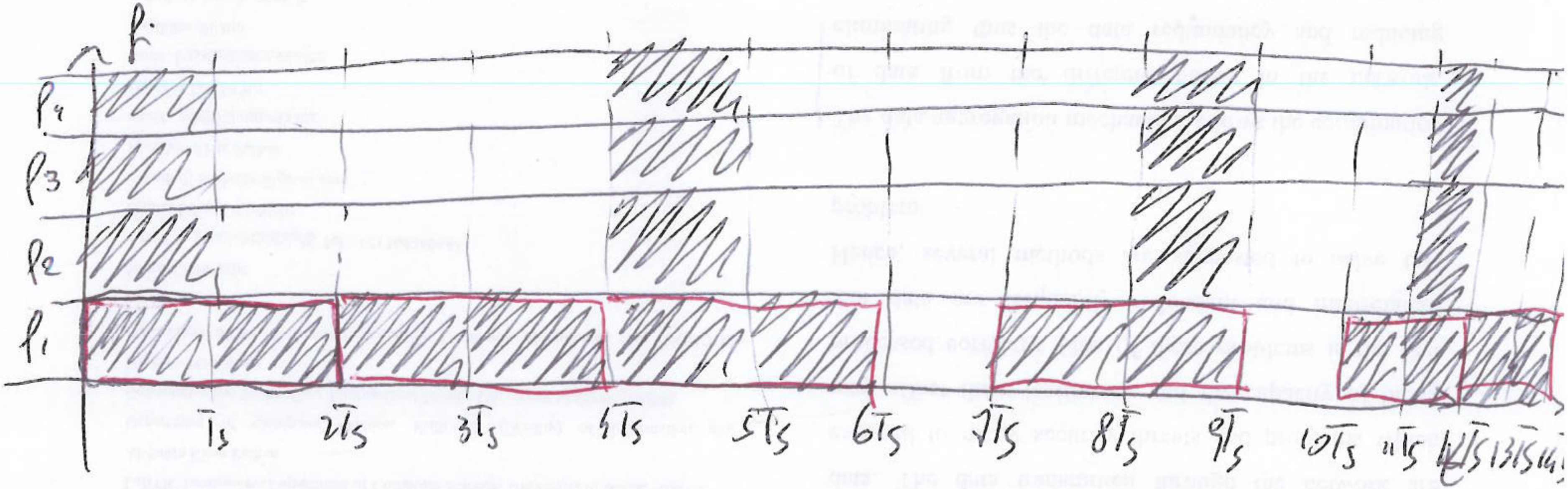
Corso di Qualità del Servizio e Sicurezza

13-04-2015

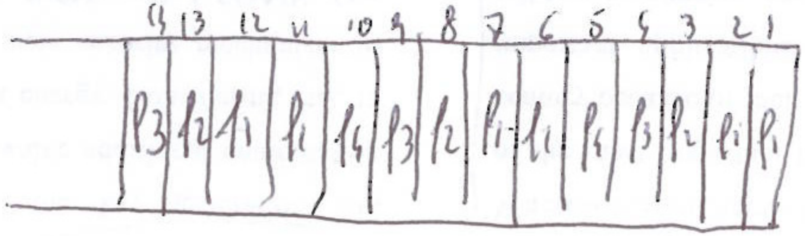
Scheduling e shaping

ESERCIZIO) ROUND ROBIN (COME PRECEDENTE), MA CON 5

PACKET_SIZE-1 = 2 * PACKET_SIZE



$B(f_1) = \frac{12L}{14T_s} = \frac{6}{7}C \simeq 857{,}14 \text{ Mbps}$ $B(f_2) = B(f_3) = B(f_4) = \frac{4L}{14T_s} = \frac{2}{7}C \simeq 285$ Mbps



$$A(f_1) = \frac{6L}{14T_S} \approx \frac{3}{7}C \approx 428{,}57\ Kbps \qquad A(f_2) = A(f_3) = \frac{3L}{14T_S} \approx \frac{3}{14}C \approx 214{,}28\ Kbps$$

$$A(f_4) = \frac{2L}{14T_S} \approx \frac{1}{7}C \approx 142{,}85\ Kbps$$

([illegible]) W.F.Q.

$w_1 = 5$

$w_2 = 1$

$w_3 = 1$

$w_4 = 3$

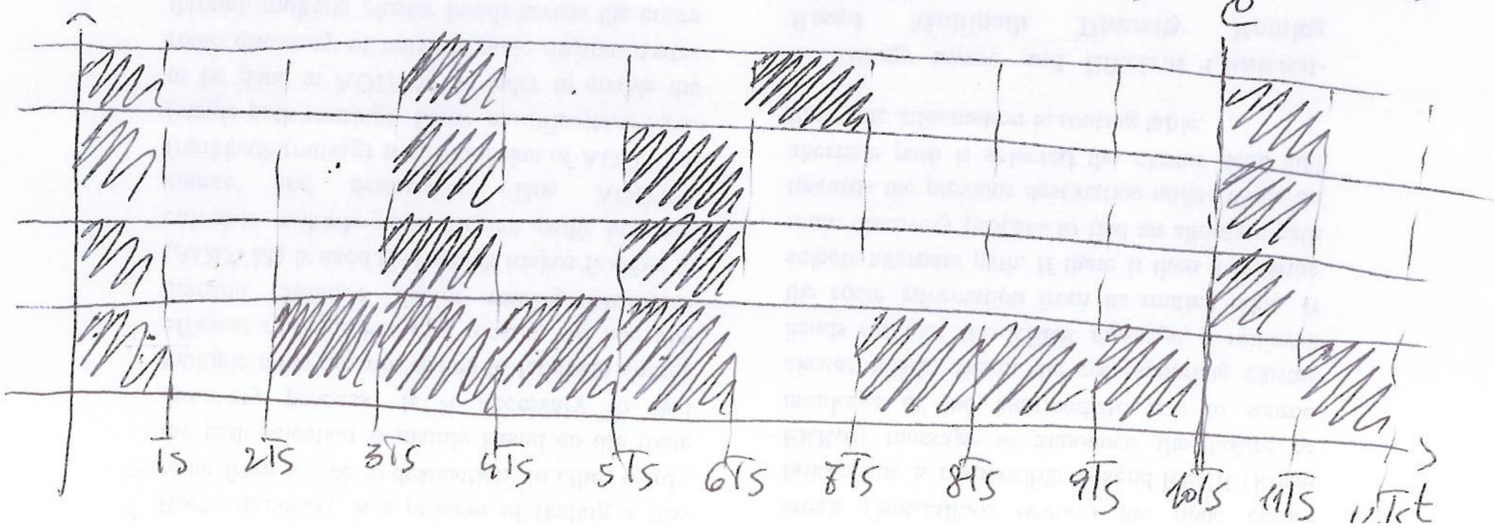
$\sum_{j=1}^{4} w_j = 10$

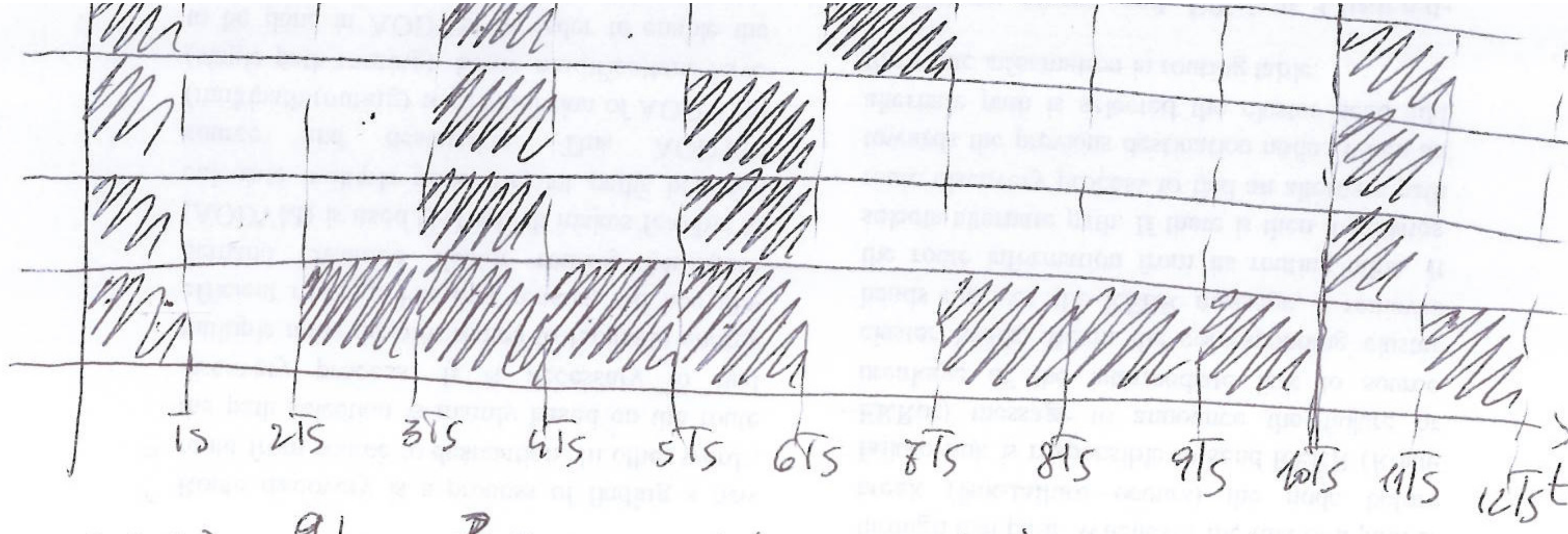
$C = 1Mbps$

$n = 4$

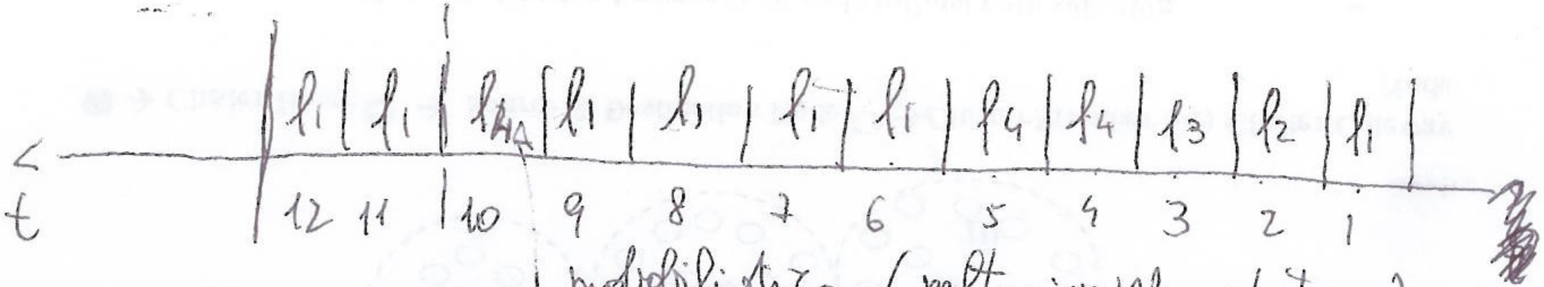
$PS = L = 100$

$T_S = \frac{PS}{C} = 1ms$





$$B(l_1) = \frac{9L}{12T_S} = \frac{3}{4}C \cong 750\ Kbps \quad B(l_2) = B(l_3) = B(l_4) = \frac{4L}{12T_S} = \frac{1}{3}C \cong 333K$$



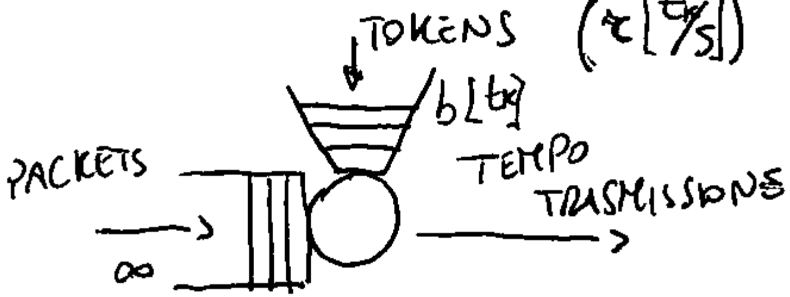
mobilistico (scelta implementativa)

$$A(l_1) = \frac{7L}{12T_S} = \frac{7}{12}C \cong 583{,}3\ Kbps \quad A(l_2) = A(l_3) = \frac{1L}{12T_S}C \cong 83{,}3\ Kbps$$

$$A(l_4) = \frac{3}{12}C = 250\ Kbps$$

7

TOKEN BUCKET



$\tau = 250\ tk/s \quad (1\,tk\ \forall\ 4ms)$

$b_{max} = 3tk$

$B \to \infty$

$t_{tx} = 1ms$

$t = 0 \quad b = 3 = b_{max}$

2) CONSIDERANDO CHE : $t = 1 \to 4$ pkts

$t = 7 \to 3$ pkts

$t = 20 \to 3$ pkts

SI RAPPRESENTI L'ANDAMENTO DELLA TRASMISSIONE PACCHETTI :

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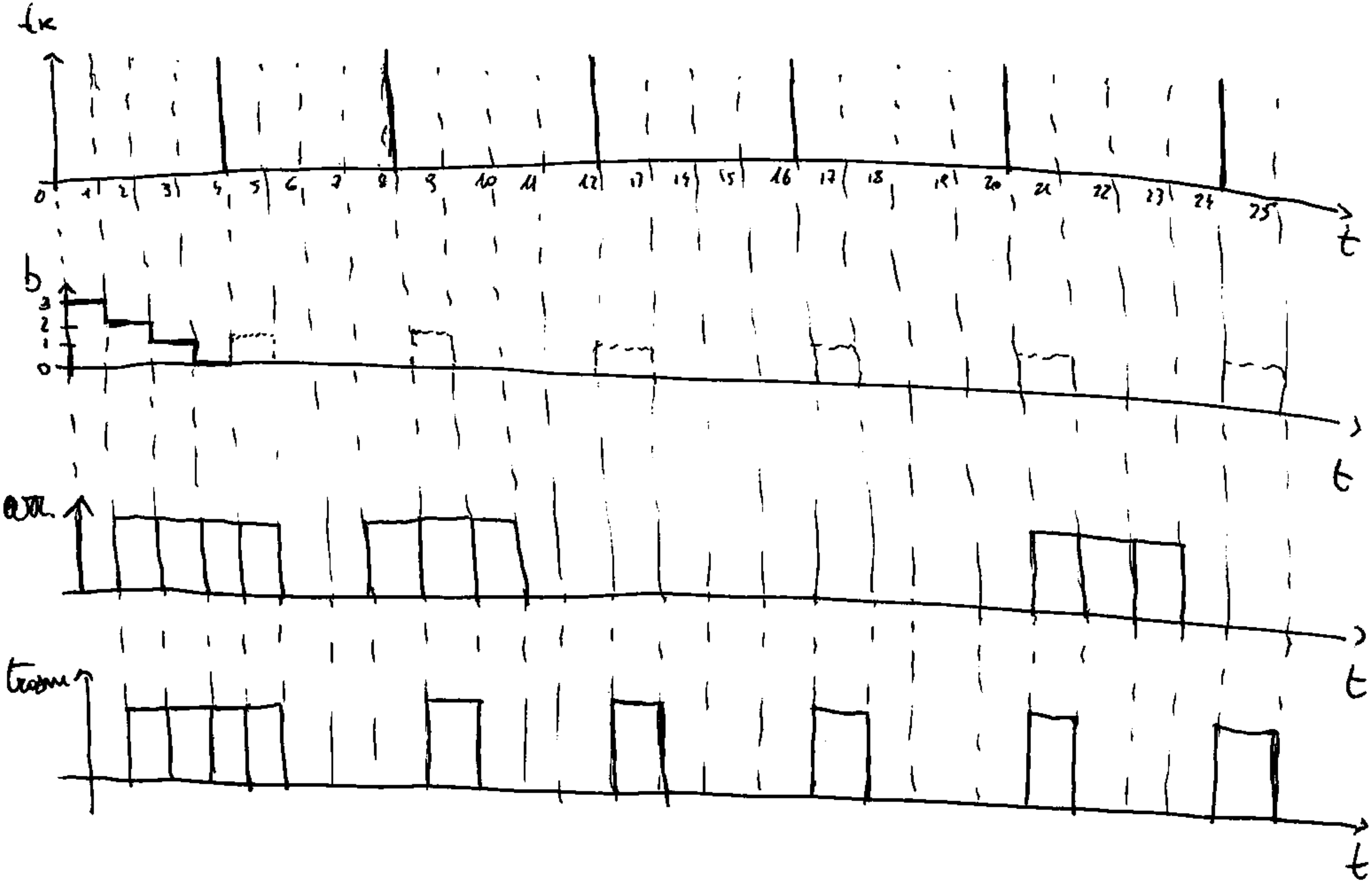
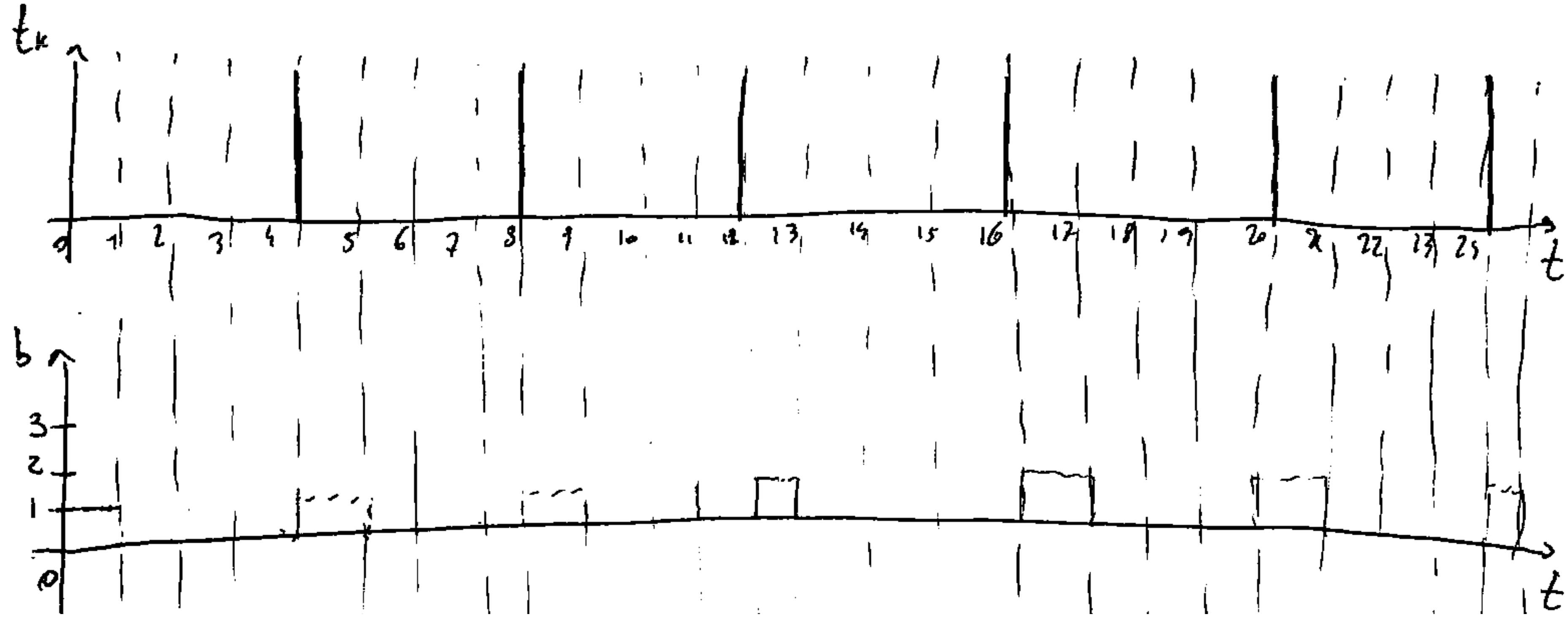


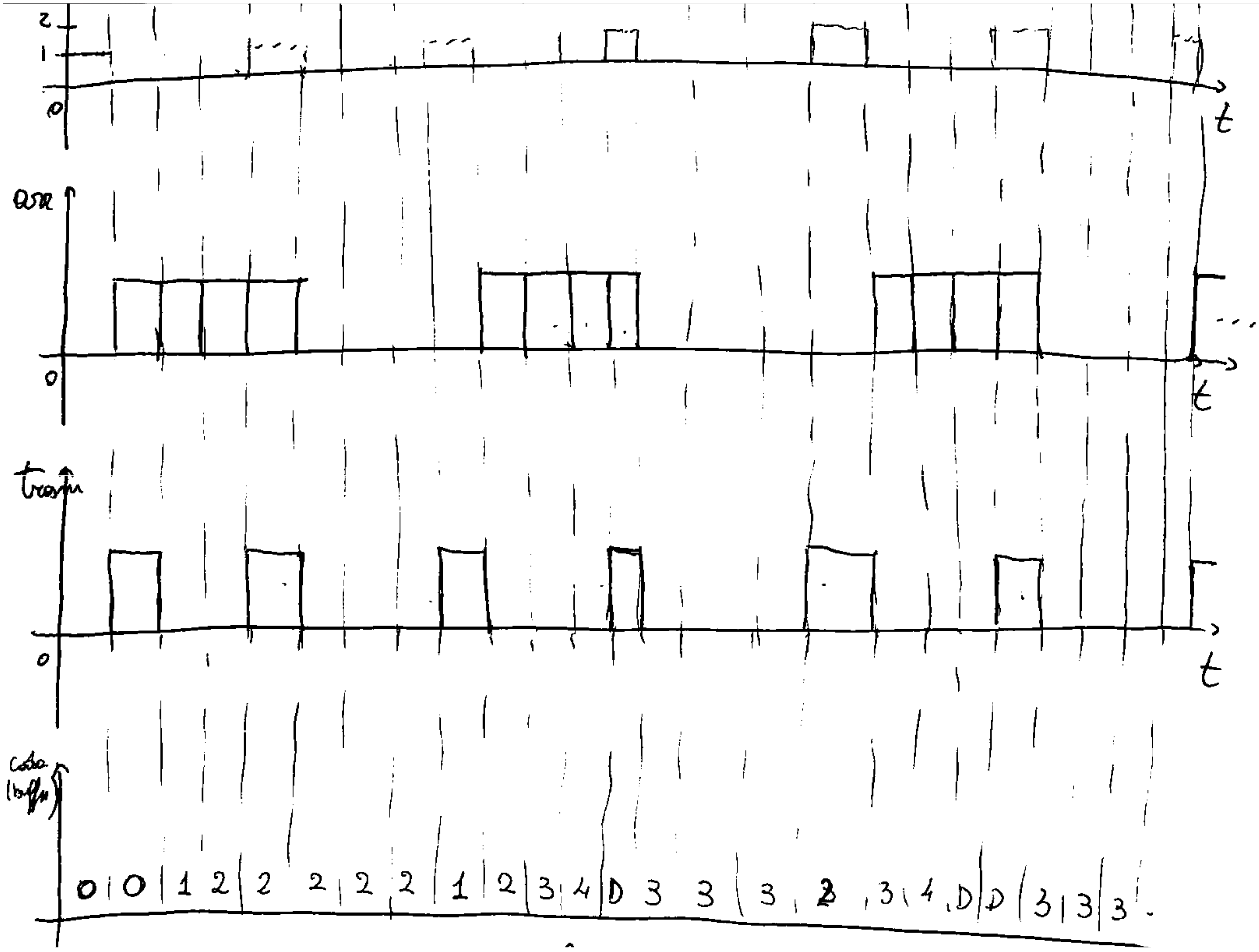
B = 4

b) IPOTIZZANDO CHE ~~nel buffer ci siano [illegible] pacchetti~~, VALUTARE LA FRAZIONE DI PACCHETTI PERSI SECONDO IL PROSPETTO DI ARRIVI:

$t = 0$ 1 token nel secchio ~~pacchetto presente nel buffer~~

$t = 1 + 8n$ arrivano 4 pacchetti




2
1
0
t
0
t
trasm
0
t
0 0 1 2 2 2 2 2 1 2 3 4 D 3 3 3 2 3 4 D D 3 3 3

ES.

$b_{max} = 500\,Kb \qquad r = 1\,Mbps \qquad V_{TR} = 3\,Mbps \qquad \delta = 5\,Mbps$

VALUTARE IL TEMPO MASSIMO DI BURST (SI TRASMETTE A V_{TR})

$$T_{MAX} = \frac{b_{max}}{(3-1)\times 10^{6}} = \frac{500\times \cancel{10^{3}}}{2\times 10^{\cancel{6}\,3}} = \frac{500}{2\times 1000} = \frac{1}{4}\,s = 0.25\,s$$

SE $r > V_{TR} \Rightarrow T_{MAX} \rightarrow \infty$