$$\begin{array}{r|l} 2000 & 2 \\ 1000 & 2 \\ 500 & 2 \\ 250 & 2 \\ 125 & 5 \\ 25 & 5 \\ 5 & 5 \\ 1 & 1 \end{array}$$

$$2000 = 2^4 \cdot 5^3$$

$$Div(2000) = (1, 2, 4, 5, 8, 10, 16, 25 \ldots)$$

$$T_m = mcm(500, 1000, 2000) = 2000 \text{ ms.}$$

$$T_m = k T_s \Rightarrow T_s = \frac{T_m}{k} = \frac{2000}{k}$$

Restricciones T_s
$$\begin{cases} \bullet\ T_m \,\%\, k == 0 \\ \bullet\ \max(100, 150, 200, 240) \leq T_s \\ \bullet\ T_s \leq \min(500, 1000, 2000) \end{cases}$$

$$240 \leq \frac{2000}{k} \leq 500$$

$$Div(2000) = (1, 2, 4, 5, 8, 10 \ldots)$$

$$\frac{2000}{1} = 2000 \qquad \frac{2000}{2} = 1000 \qquad \frac{2000}{10} = 200$$

$$\frac{2000}{4} = 500 \qquad \frac{2000}{5} = 400 \qquad \frac{2000}{8} = 250$$

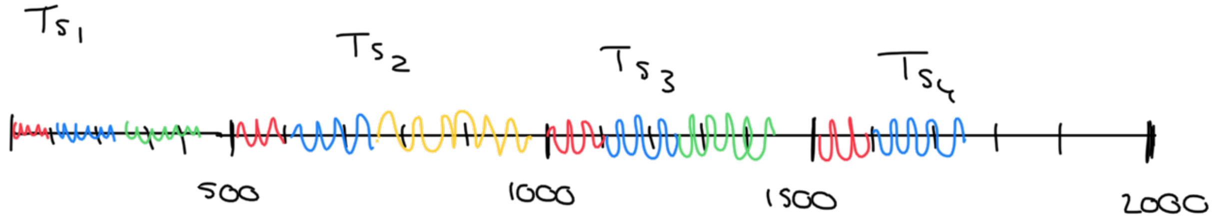
Por lo que los k válidos son 4, 5, 8.

- si $k = 4 \longrightarrow T_s = 500$
- si $k = 5 \longrightarrow T_s = 400$
- si $k = 8 \longrightarrow T_s = 250$

- **PLANIFICA CÍCLICA (K=4)**

$T_m = 2000$ $\qquad$ $T_s = 500$

A B C D



$Ts_1 = A + B + C = 100 + 150 + 200 = 450 \quad (R = 50)$

$Ts_2 = A + B + D = 100 + 150 + 240 = 490 \quad (R = 10)$

$Ts_3 = A + B + C = 100 + 150 + 200 = 450 \quad (R = 50)$

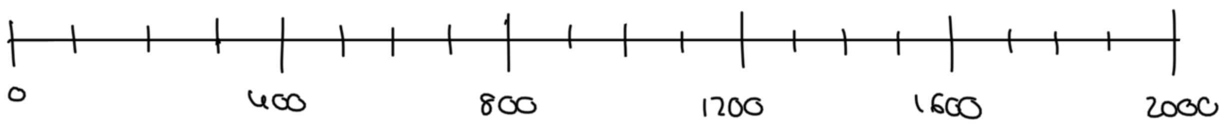
$Ts_4 = A + B = 100 + 150 = 250 \quad (R = 250)$

$R = 360$

- **PLANIFICACIÓN CÍCLICA (K=5)**

$T_m = 2000$ $\qquad$ $T_s = 400$

A B C D

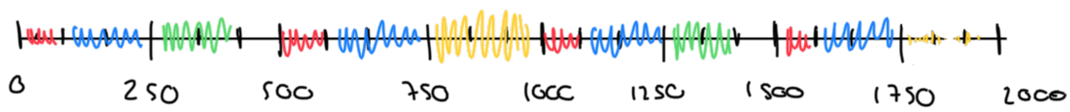


(No planificable)

- **PLANIFICACIÓN CÍCLICA (K=8)**

$T_m = 2000$ $\qquad$ $T_s = 250$

A B C D



$T_{S_1} = A + B = 250 \quad (R = 0)$

$T_{S_2} = C = 200 \quad (R = 50)$

$T_{S_3} = A + B = 250 \quad (R = 0)$

$T_{S_4} = D = 240 \quad (R = 10)$

$T_{S_5} = A + B = 250 \quad (R = 0)$

$T_{S_6} = C = 200 \quad (R = 50)$

$T_{S_7} = A + B = 250 \quad (R = 0$

$T_{S_8} = \emptyset \quad (R = 250)$

$(R = 360)$

- El tiempo mínimo de espera para mi solución (por intervalo es 10 ms)
- Sí sería planificable (teóricamente) para D = 250, aunque en la práctica probablemente no lo sea puesto que la espera en algunos ciclos secundarios sería 0.

Firmado: Carlos Quesada Pérez (Grupo B2)