DATA: $\lambda = 0{,}15$ PERSONS/FRAME
1 PAN
3 CAMERA NODES
$R = 250$ Kbps
$L = 128$ bytes
1 PACKET IN ONE SLOT

2.1 P_{-V_0} P_{-V_1} P_{-V_2} ?
2.2 T_S ?
NUMBER SLOTS IN CFP ?
T_{ACTIVE} ?
$T_{INACTIVE}$?
DUTY CYCLE ?
2.3 ADDITIONAL CAMERA FOR A DUTY CYCLE $< 10\%$?

2.1 $P_\lambda(x) = \frac{e^{-\lambda}\lambda^x}{X!}$

$P(0) = \frac{e^{-0{,}15} \cdot 0{,}15^0}{0!} = \underline{0{,}8607}$

$P(1) = \frac{e^{-0{,}15} \cdot 0{,}15^1}{1!} = \underline{0{,}1291}$

$P(2) = 1 - P(0) - P(1) = \underline{0{,}0102}$

2.2 128 byte = 1024 bit

$T_S = \frac{1024 \text{ bit}}{250\,000 \text{ bit}} = \underline{4{,}096 \text{ ms}}$ $\quad N_{CFP} = \frac{\text{RATE WORST CASE}}{\text{MIN RATE}} \cdot \text{NODES} = \frac{6}{1} \cdot 3 = \underline{18 \text{ SLOTS}}$

$T_{ACTIVE} = (18+1) \cdot 4{,}096 \text{ ms} = \underline{77{,}824 \text{ ms}}$

$BI = \frac{L}{\text{MINIMUM OUTPUT RATE}} = \frac{128 \text{ BYTE}}{100 \text{ BYTE/s}} = \underline{1{,}28 \text{ s}}$ $\quad T_{INACTIVE} = 1{,}28 \text{ s} - 77{,}824 \text{ ms} = \underline{1{,}202 \text{ s}}$

↳ $1 \text{ KB/10 s} = 100 \text{ BYTE/s}$

DUTY CYCLE $= \frac{T_{ACTIVE}}{BI} = \frac{77{,}824 \text{ ms}}{1280 \text{ ms}} = 0{,}0608 = \underline{6{,}08\%}$

2.3 DUTY CYCLE $= \frac{T_{ACTIVE}}{BI} = \frac{N \cdot \text{SLOTS CAMERA} \cdot T_S}{BI} \rightarrow T_{ACTIVE} = (N \cdot 6 + 1) \cdot T_S$

D.C $< 10\% \rightarrow \frac{(6N+1) \cdot T_S}{BI} < 0{,}10 \quad (6N+1) < \frac{0{,}10 \cdot BI}{T_S}$

$6N + 1 < 31{,}25 \quad N \cong 5 \quad 5 - 3 = \underline{2 \text{ NODES}}$ WE CAN ADD
↳ ALREADY HAVE