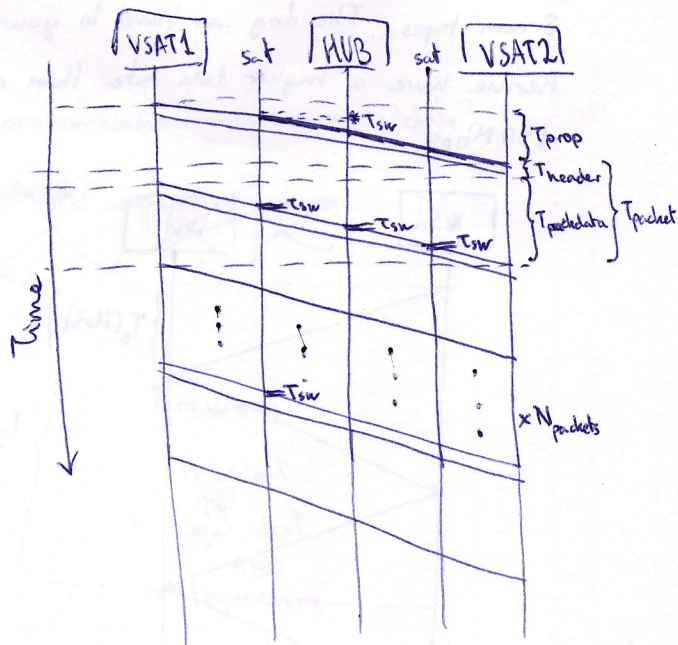
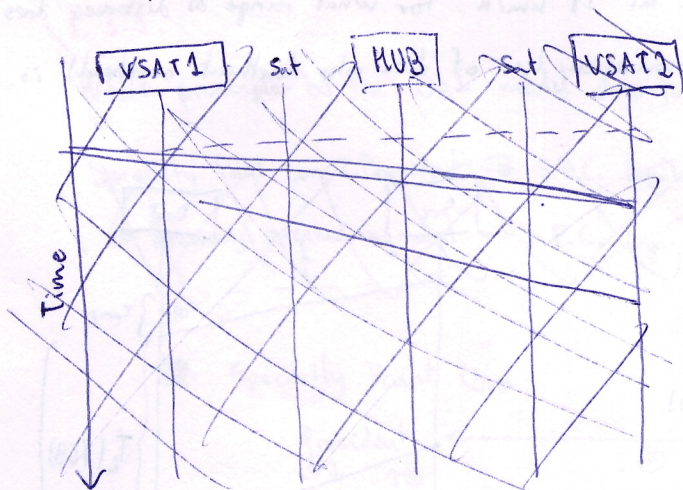


1.2.3.

Calculate transfer time if packet switching is used with 64 KB packets, 10 μ s switching time, 32 B packet header.



$$T_{\text{Total}} = T_{\text{prop}} + N_{\text{packets}} (T_{\text{packet}}) = \frac{4 \cdot \text{dist}(\text{earth, sat})}{v_{\text{prop}}} + \frac{\text{size}(T_x)}{\text{size}(P_{\text{data}})} \left(\frac{\text{size}(P_h) + \text{size}(P_{\text{data}})}{R_{\text{trans}}} \right) =$$

$$= 4 \cdot \frac{35800 \text{ km}}{300000 \text{ km/s}} + \frac{4 \cdot 2^{30} \cdot 86}{64 \cdot 2^{10} \cdot 86} \cdot \left(\frac{32 \cdot 86 + 64 \cdot 2^{10} \cdot 86}{4 \cdot 10^6 \cdot \frac{1}{5}} \right) + 10 \cdot 10^{-6} \text{ s} = \underline{\underline{18196.48 \text{ s}}}$$