

Tutorial: Evolution of the Mobile Basestation's Need for Sync

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Calnex

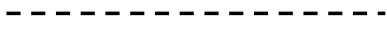


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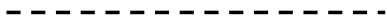
Frequency Accuracy



+50



-50



Tolerance:
150 ppb

Lock-in range
250 ppb



250 ppb



Doppler Shift

320 km/h

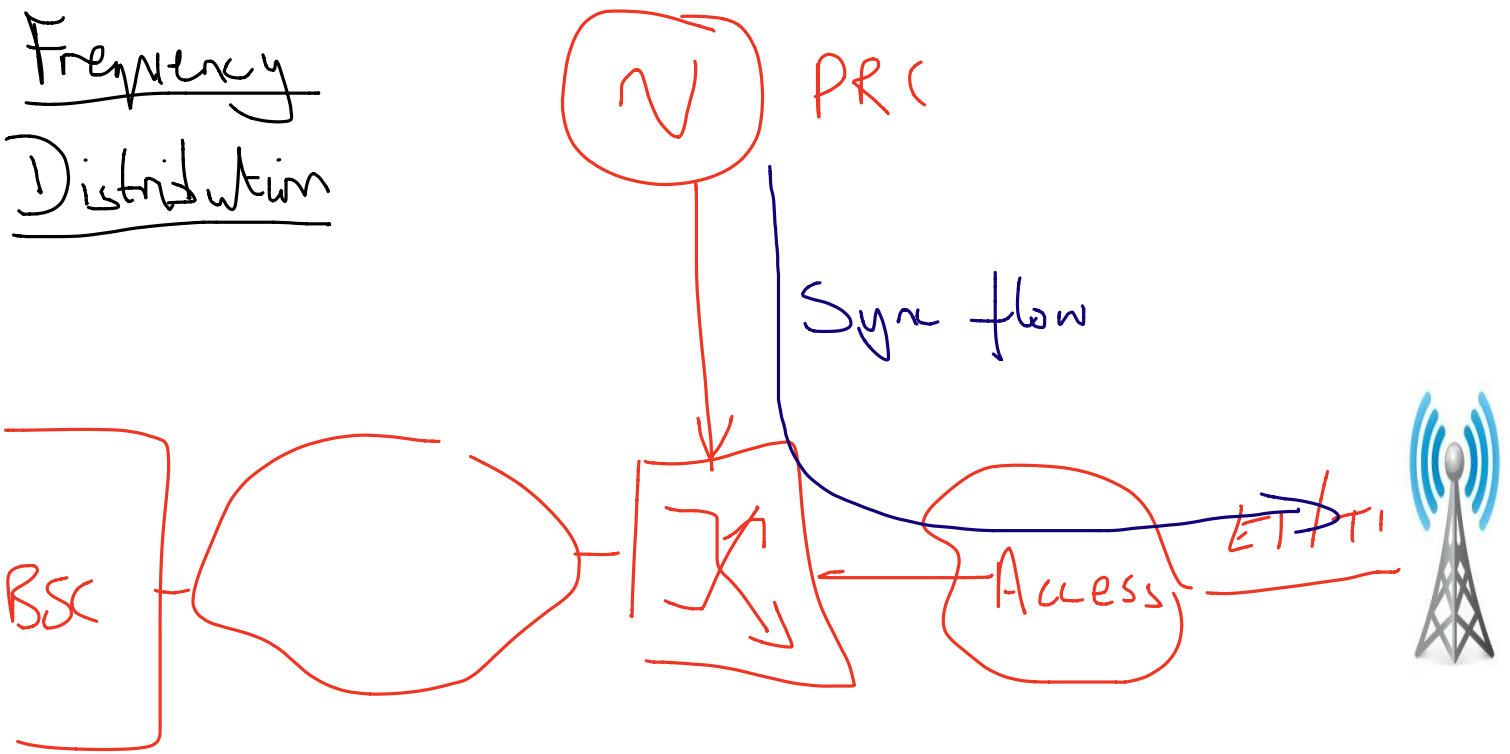
$$\Delta f = \frac{f_0 \cdot \Delta v}{c}$$
$$= 300 \text{ ppb}$$



$$150 \text{ ppb} = 160 \text{ km/h}$$
$$= 100 \text{ mph}$$



Frequency Distribution



Base station derives frequency from E1 - traceable to PRC

EI MTIE limit

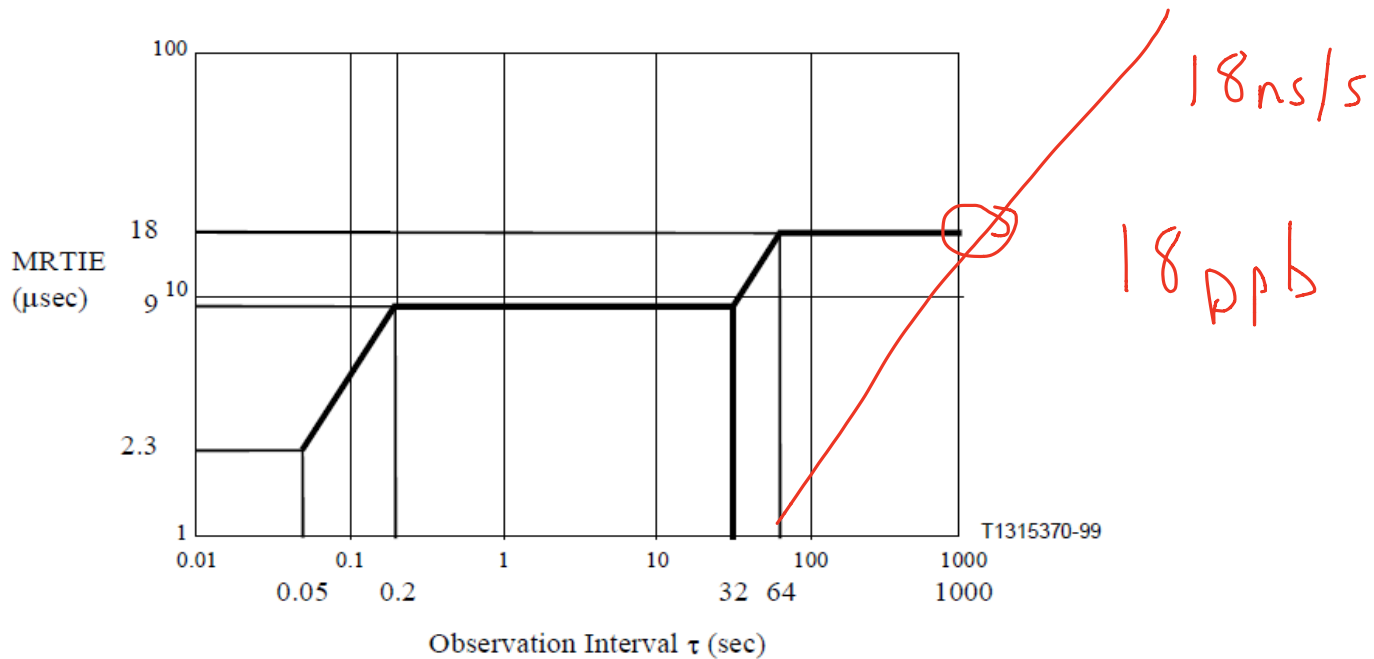
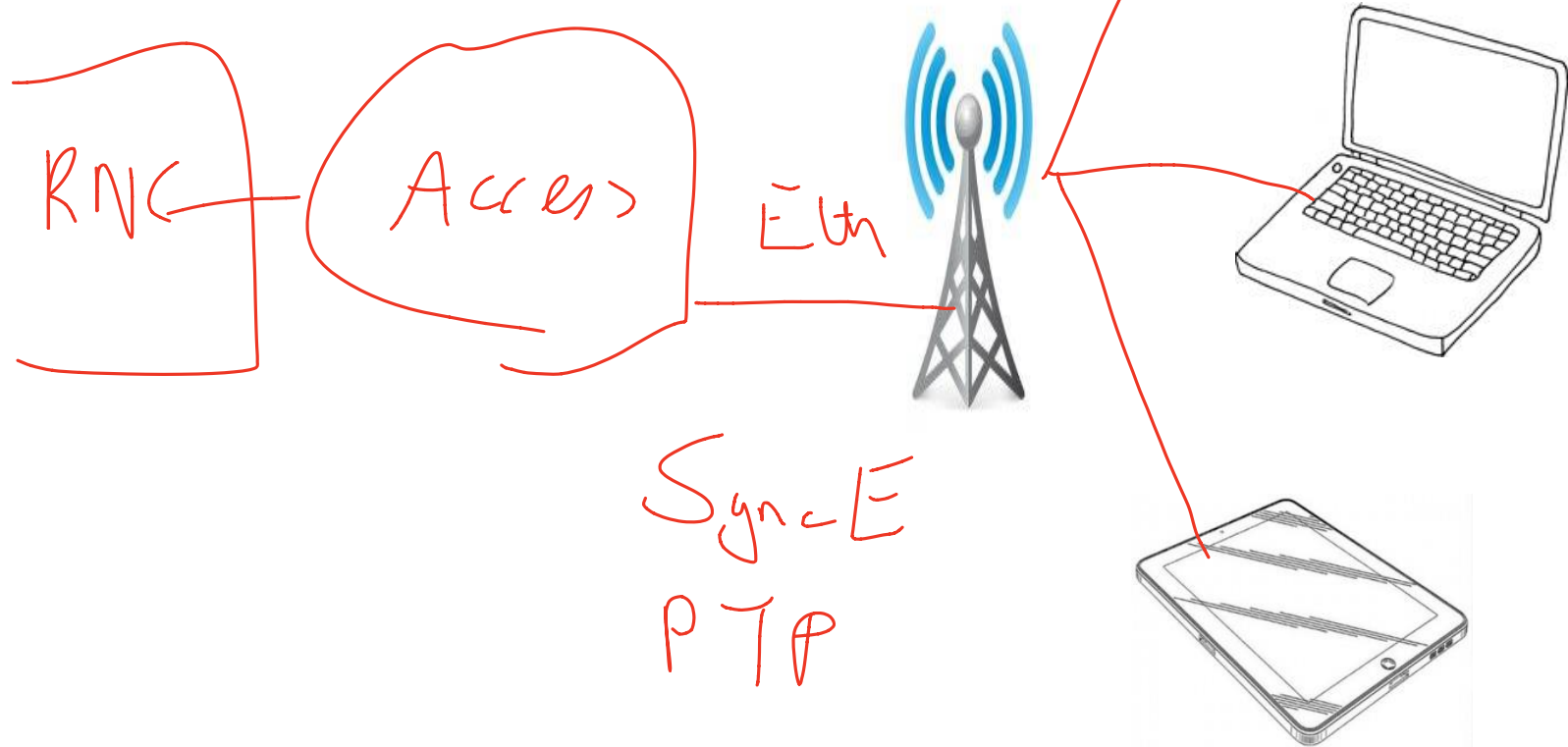


Figure 1/G.823 – 2048 kbit/s interface output wander limit

Move to Packet Networks



G.8261.1

Packet Clock Output

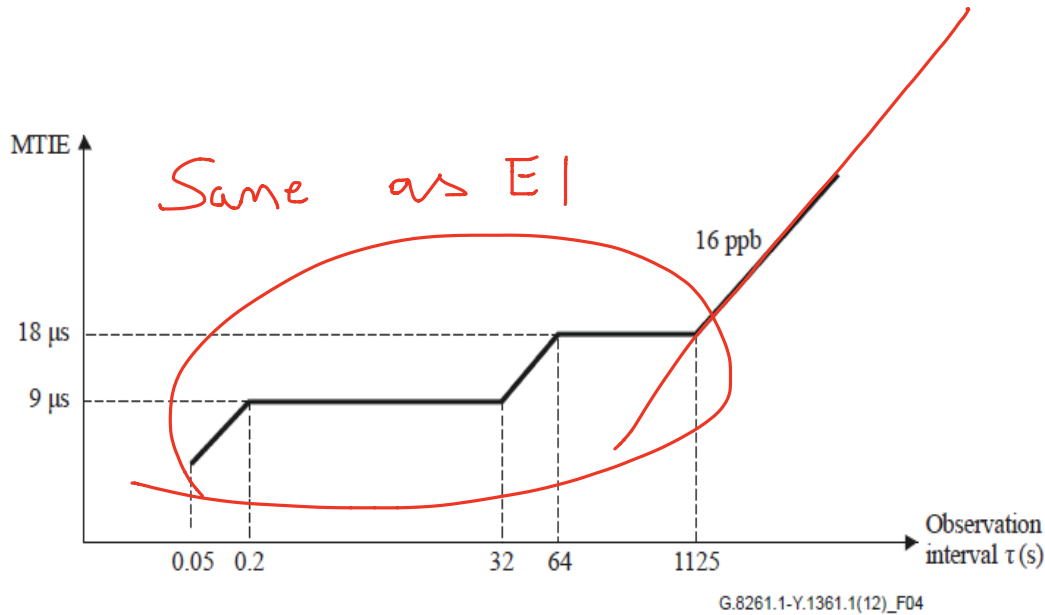
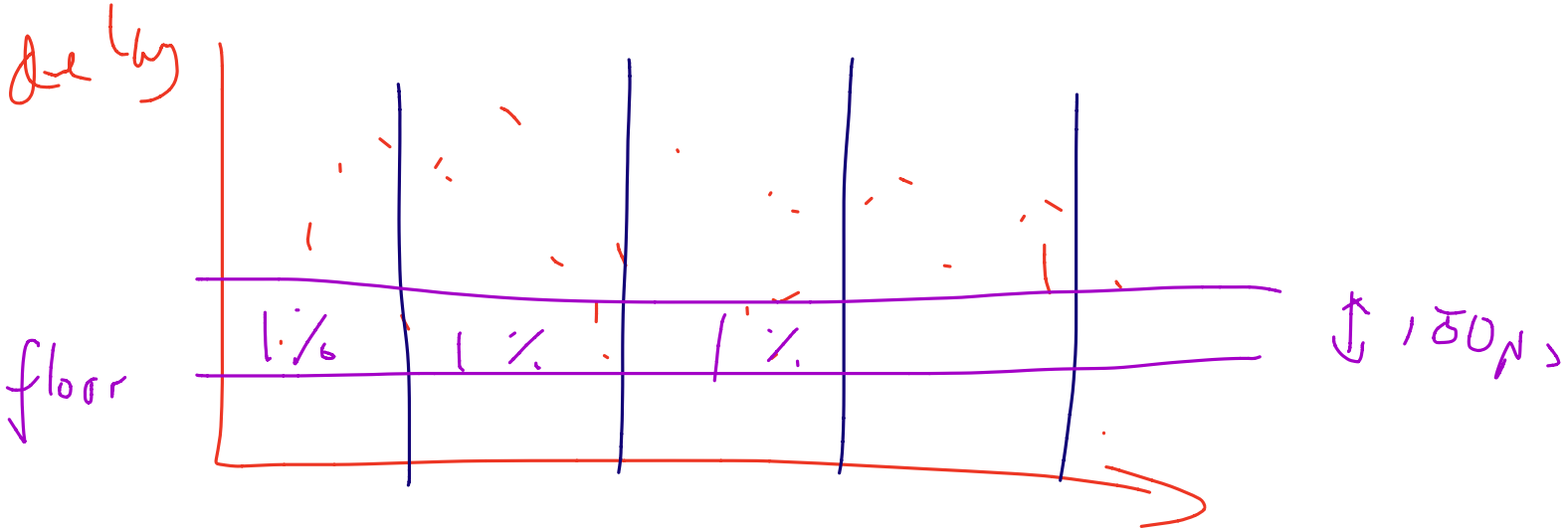
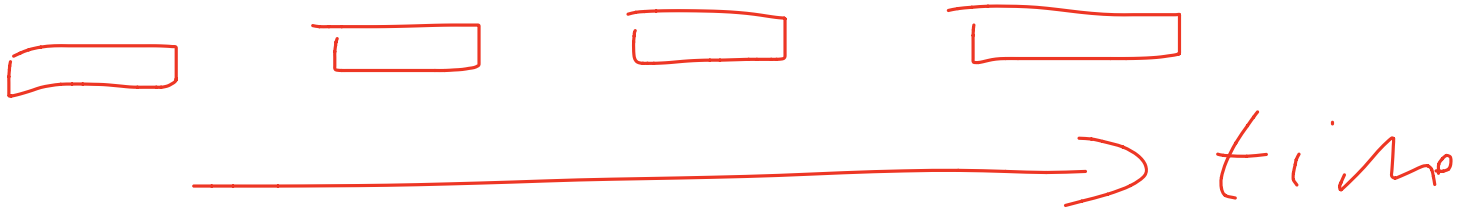


Figure 4 – Output wander network limit for case 3 based on [ITU-T G.823]

PTP to base station

Packet Clock Input: PDV



F P P (Floor Packet Percentage) time

Time Sync Requirements for TDD

