

Mobile Communications

Problem Set 10

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1. Explain the use of training sequences in GSM.
2. What types of bursts exist within a TDMA frame in GSM?
3. Do collisions occur when mobile stations try to generate calls in GSM?
4. Calculate the timing advance for cells with the following radius (a) 2 km, (b) 10 km. Given that the guard space of GSM is $30.5 \mu s$ is a timing advance (theoretically) needed in cases (a) and (b)? Is the timing advance more critical in city centers or in rural areas? Given that timing advance is coded in 63 bits times $3.69 \mu s$, in which distance steps does the timing advance information change?