

Homework 6
Assigned: 4/20/2007
Due: 4/27/2007

- 1) Why do we use hexagon-shaped cells? (10 points)
- 2) Name 2 advantages and 2 disadvantages of using smaller cells .(15 points)
- 3) What is the average load (in Erlangs) that 12 trunks can carry with blocking probability of 1%? (Assume one channel is 1 trunk.) What is the average load that 36 trunks can support with blocking probability of 1%? Which one is more efficient? (25 points)
- 4) Compare the user density in [users/km²] for the following two systems, each with 105 voice channels, reuse factor of 7, blocking probability of 1%, and average user load of 0.03 [Erlang], and cell radius of 2 [km]. (Assuming hexagon shaped cells). Repeat the calculation for reuse factor of 3. (35 points)
- 5) Calculate SIR of a system with reuse of 3 assuming attenuation factor is 4, hexagon-shaped cells, and each cell has 6 immediate neighbors. (15 points)