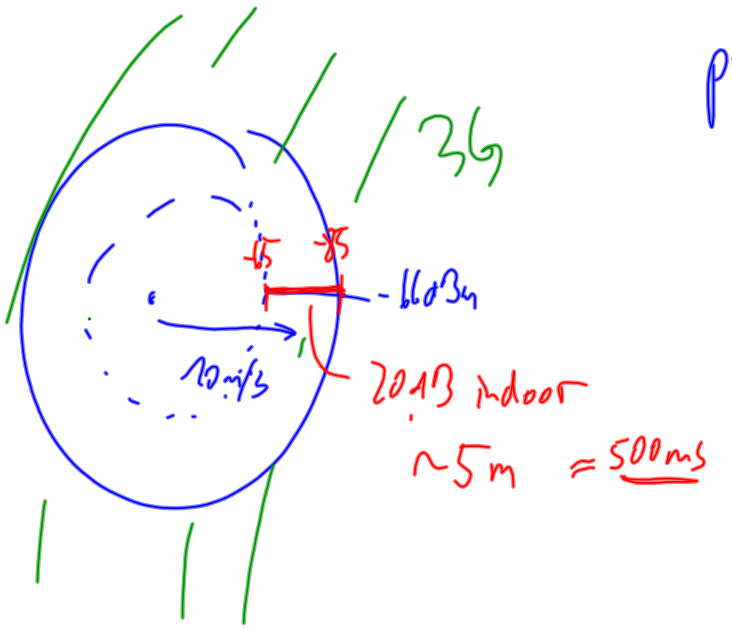
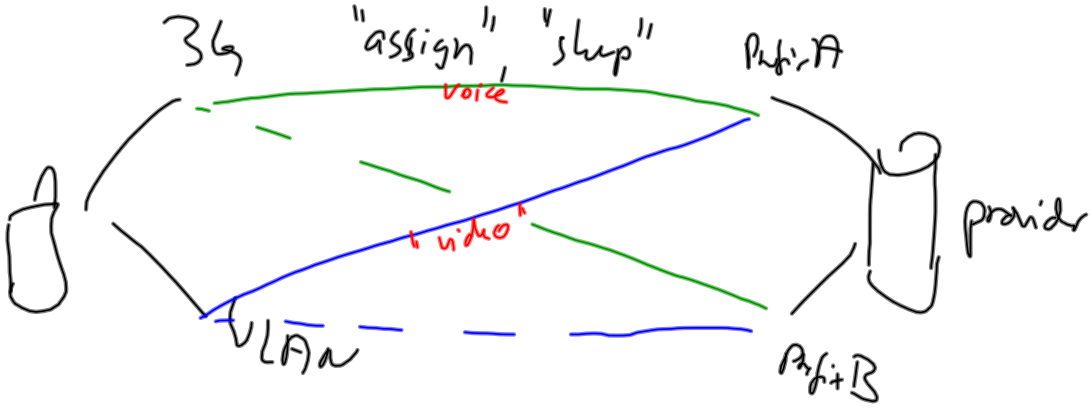


ping - pong



Multi-homing
- "faster handover"
- 2 simult. sessions
  - if TCP gets broken
  - DNS, firewall records to update

Multi-homing
- reliability
- ....

Exam

- 2 Presentations
- Simulation work

Recommendation for MIP ⇝ 1…2 sec ⇝ hand over $v_1 = 20$ km/h $v_2 = 3$ km/h

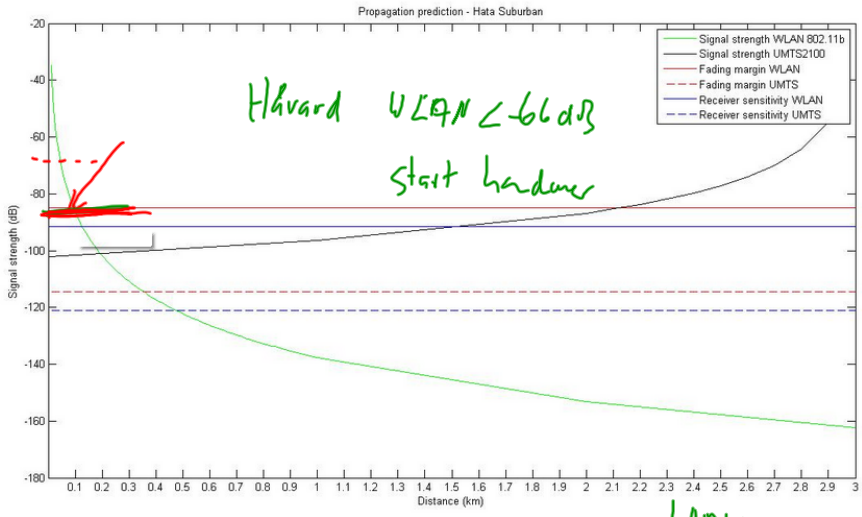
Scenario 2
$P_R = -$ dBm
$P_R = -$ dBm

MANET, Multi-homing ar | Search results for ".19" - C | Seminar Simulation Result | Scenario 1 code - CWI

cwi.unik.no/wiki/Seminar_Simulation_Results

Alternate results

Assuming new value for transmitter height of UMTS (legal numbers are 30-200m), and assuming that the Hata model does not give entirely wrong results when illegal parameters are used, we can try to create a better estimate. Using a near 0 value for the 802.11b height (sea level lower than ground level, antenna barely above ground) and the Hata suburban model, we get these results:



- Fading margin for 802.11b hit at 94.2 m, at signal strength -84.9174.
- UMTS never dips below fading margin.
- This gives us around 16 seconds from when we start driving to perform the handover.

WLAN
$\Delta t = f(v, P_R)$
$\Delta t \sim 1 \ldots 2$ s
$v = 20$ km/h
$v = 3$ km/h
-66dB

Alternate code: Scenario_2_alternate_code

Scenario 3

cwi.unik.no/wiki/File:Scenario2_b.jpg

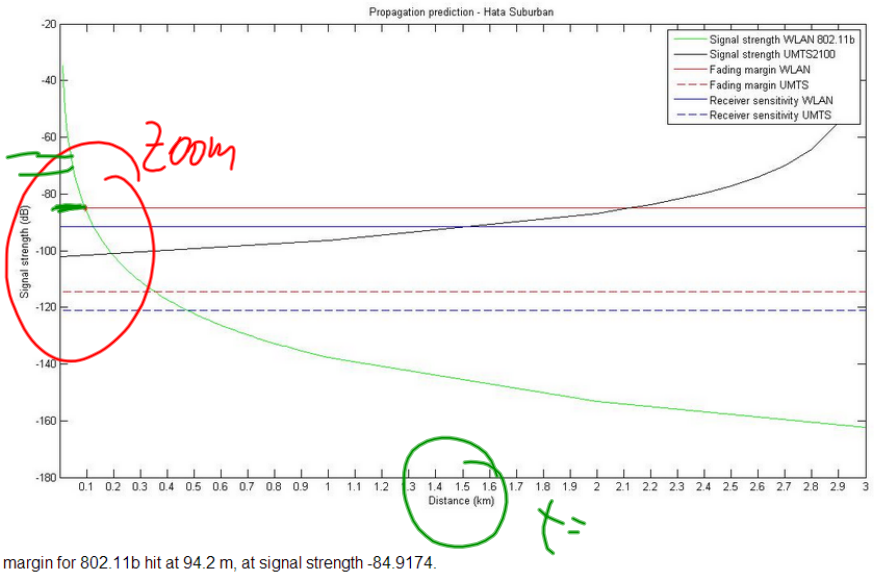
la and 802.11b.

MANET, Multi-homing ar × | Search results for ".19" - C × | Seminar Simulation Result × | Scenario 1 code - CWI ×

cwi.unik.no/wiki/Seminar_Simulation_Results

Alternate results

Assuming new value for transmitter height of UMTS (legal numbers are 30-200m), and assuming that the Hata model does not give entirely wrong results when illegal parameters are used, we can try to create a better estimate. Using a near 0 value for the 802.11b height (sea level lower than ground level, antenna barely above ground) and the Hata suburban model, we get these results:

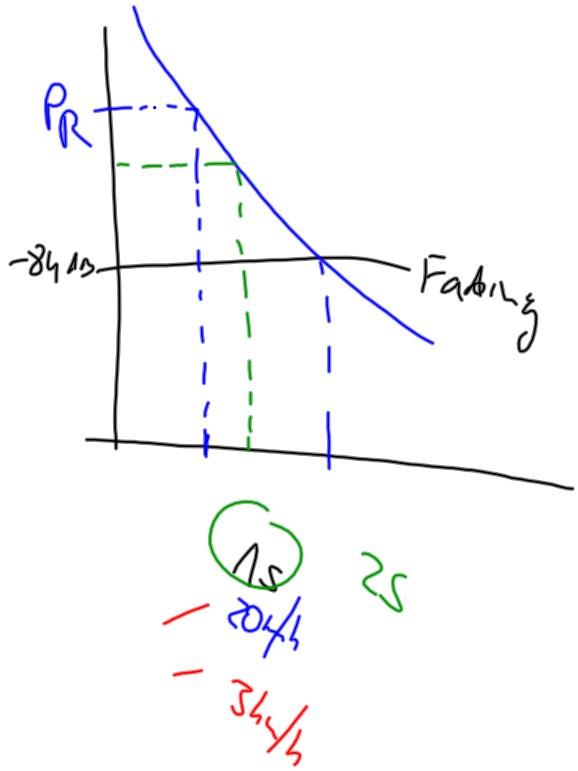


- Fading margin for 802.11b hit at 94.2 m, at signal strength -84.9174.
- UMTS never dips below fading margin.
- This gives us around 16 seconds from when we start driving to perform the handover.

Alternate code: Scenario_2_alternate_code

Scenario 3

Handover between 802.11a and 802.11b.


P_R
Fading

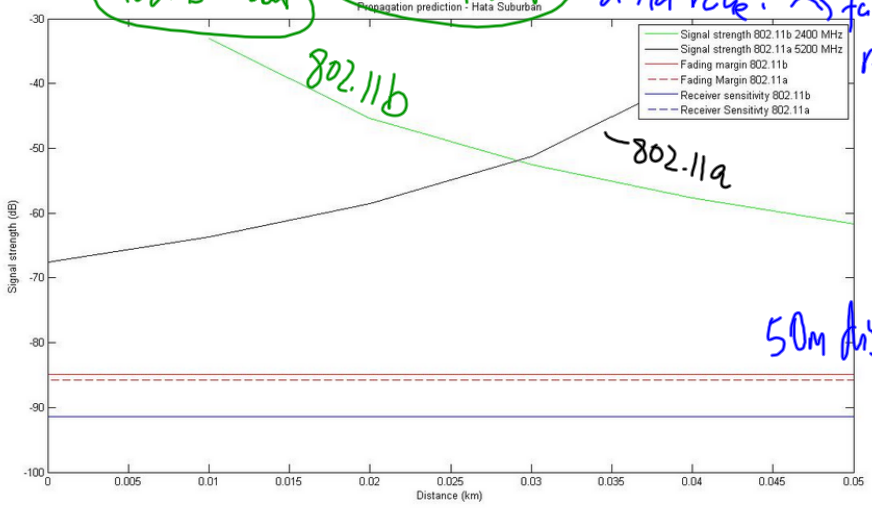
MANET, Multi-homing ar | Search results for ".19" - C | Seminar Simulation Result | Scenario 1 code - CWI

cwi.unik.no/wiki/Seminar_Simulation_Results

- Range between towers: 50 m
- Height of transmitters: 4 m
- Height of receiver: 1.8 m
- Data rate: 12.2 kbps
- Temperature: 293.15 K
- Traveling at 3 km/h
- Collected other data from Media:201211UNIK4700-BlockSeminar.pdf, page 9

Results

Assuming data rate of 11 Mb/s. Ignoring the freespace model this time and going straight for the modified Hata, we get the following graph:



We never hit the fading margin, and should have no problems doing handovers.

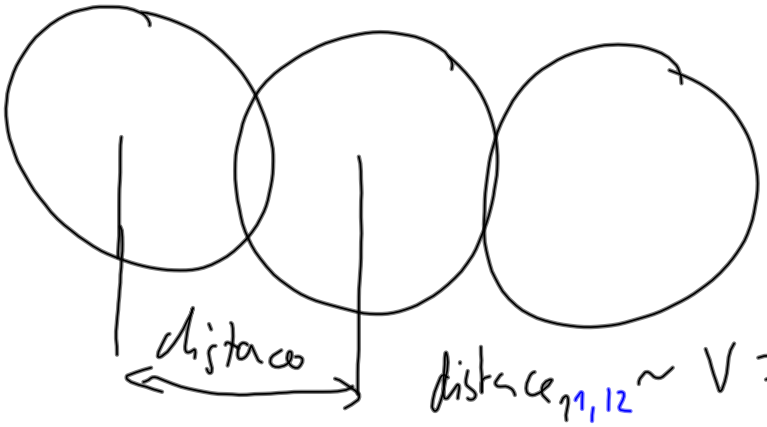
Code for this scenario: Scenario_3_code

Conclusions

Scenario 4 UMTS - UMTS handover

Mobile IP → 1-2 sec handover

HMIP → 100 msec handover



$distance_{11,12}$ ~ V = 120 km/h

$2^{2,22}$ V = 60 km/h

$37,32$ V = 3 km/h