

## SUPPORT DOCUMENT – Simulation Results

### Figure 19: WiMAX Throughput

#### RMPA policy

sample mean : 997,827.400000001

variance : 1,043,269,047,819.24

standard deviation : 1,021,405.42774123

80% conf interval: [ 866,264.613639625, 1,129,390.18636038 ]

90% conf interval: [ 828,959.74740729, 1,166,695.05259271 ]

95% conf interval: [ 796,623.388400175, 1,199,031.41159983 ]

98% conf interval: [ 758,979.760311575, 1,236,675.03968843 ]

99% conf interval: [ 733,490.497005332, 1,262,164.30299467 ]

#### SNR policy

sample mean : 1,016,883.8

variance : 1,043,415,360,611.56

standard deviation : 1,021,477.04849965

80% conf interval: [ 885,311.788481541, 1,148,455.81151846 ]

90% conf interval: [ 848,004.306438931, 1,185,763.29356107 ]

95% conf interval: [ 815,665.680012343, 1,218,101.91998766 ]

98% conf interval: [ 778,019.41235955, 1,255,748.18764045 ]

99% conf interval: [ 752,528.36175091, 1,281,239.23824909 ]

### Figure 18A WIMAX Delay

#### RMPA policy

sample mean : 0.0925433020091

variance : 0.00470605761099

standard deviation : 0.0686007114467

80% conf interval: [ 0.0824583387043, 0.102628265314 ]

90% conf interval: [ 0.0795987291031, 0.105487874915 ]

95% conf interval: [ 0.0771199810998, 0.107966622918 ]

98% conf interval: [ 0.0742344036623, 0.110852200356 ]

99% conf interval: [ 0.0722805207124, 0.112806083306 ]

### **SNR policy**

sample mean : 0.104650948107

variance : 0.00625378238908

standard deviation : 0.079080859815

\*\* confidence intervals valid if entries are independent samples

80% conf interval: [ 0.0930253023586, 0.116276593855 ]

90% conf interval: [ 0.0897288294615, 0.119573066752 ]

95% conf interval: [ 0.0868714024869, 0.122430493727 ]

98% conf interval: [ 0.0835449946406, 0.125756901573 ]

99% conf interval: [ 0.0812926164889, 0.128009279725 ]

### **Figure 19: Downlink Packets Dropped or PER**

#### **RMPA policy**

sample mean : 0.379166666667

variance : 0.298940972222

standard deviation : 0.54675494714

80% conf interval: [ 0.308741542276, 0.449591791057 ]

90% conf interval: [ 0.288772370769, 0.469560962565 ]

95% conf interval: [ 0.271462824746, 0.486870508588 ]

98% conf interval: [ 0.251312315137, 0.507021018196 ]

99% conf interval: [ 0.237667996796, 0.520665336537 ]

#### **SNR policy**

sample mean : 0.583333333333

variance : 1.611111111111

standard deviation : 1.26929551764

80% conf interval: [ 0.419840903706, 0.746825762961 ]

90% conf interval: [ 0.373482329325, 0.793184337342 ]

95% conf interval: [ 0.333298094515, 0.833368572152 ]

98% conf interval: [ 0.286518542436, 0.880148124231 ]

99% conf interval: [ 0.254843159886, 0.911823506781 ]

**Table 7:**

**statistic : SNR policy WiMAX.Throughput (bits/sec)'**

number of values : 101

sample mean : 4,697,308.07977209

variance : 2,214,343,383,322.39

standard deviation : 1,488,066.99557594

80% conf interval: [ 4,505,636.64851503, 4,888,979.51102914 ]

90% conf interval: [ 4,451,287.86721134, 4,943,328.29233283 ]

95% conf interval: [ 4,404,177.61374226, 4,990,438.54580191 ]

98% conf interval: [ 4,349,335.29644985, 5,045,280.86309433 ]

99% conf interval: [ 4,312,200.45220739, 5,082,415.70733678 ]

**statistic : RMPA Policy WiMAX.Throughput (bits/sec)'**

sample mean : 5,243,766.40533333

variance : 3,227,838,663,686.94

standard deviation : 1,796,618.67509133

80% conf interval: [ 5,012,351.77554738, 5,475,181.03511929 ]

90% conf interval: [ 4,946,733.7383562, 5,540,799.07231047 ]

95% conf interval: [ 4,889,855.14255206, 5,597,677.6681146 ]

98% conf interval: [ 4,823,641.23435722, 5,663,891.57630944 ]

99% conf interval: [ 4,778,806.4555059, 5,708,726.35516076 ]

**statistic : SNR policy Video Conferencing.Packet End-to-End Delay (sec)'**

sample mean : 0.0349826609215

variance : 9.1029145805E-006

standard deviation : 0.00301710367414

80% conf interval: [ 0.0345795274867, 0.0353857943562 ]

90% conf interval: [ 0.0344652182715, 0.0355001035714 ]

95% conf interval: [ 0.0343661335088, 0.0355991883341 ]

98% conf interval: [ 0.0342507862628, 0.0357145355802 ]

**statistic : RMPA policy: Video Conferencing.Packet End-to-End Delay (sec)'**

sample mean : 0.0287704421767

variance : 8.05834209384E-007

standard deviation : 0.000897682688584

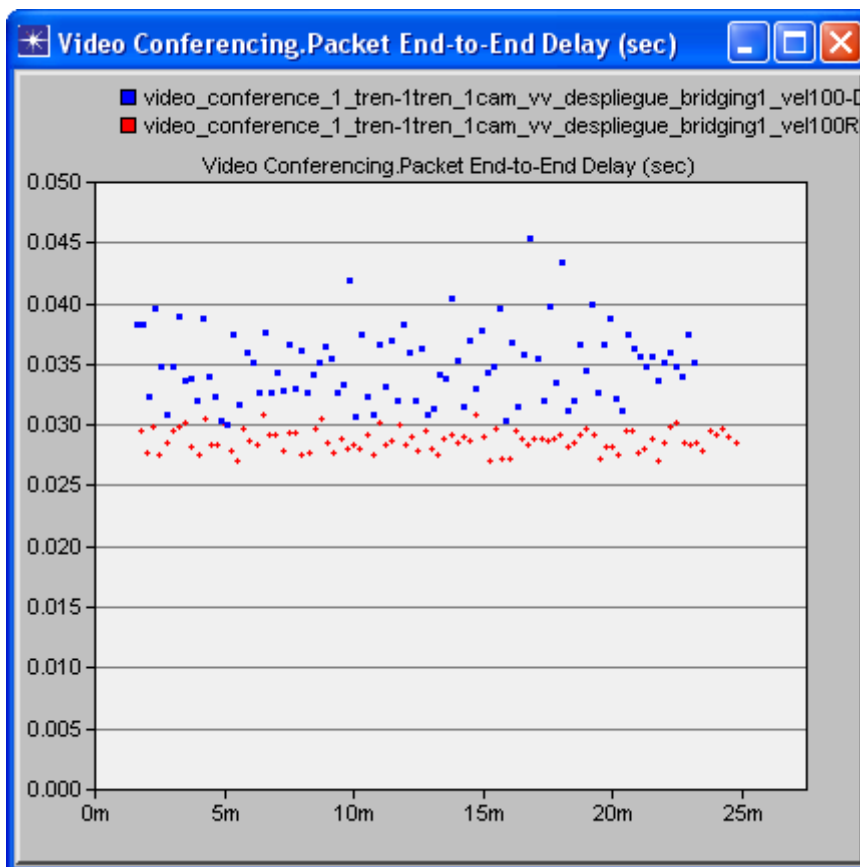
80% conf interval: [ 0.0286504973738, 0.0288903869796 ]

90% conf interval: [ 0.0286164868078, 0.0289243975456 ]

95% conf interval: [ 0.0285870059925, 0.0289538783609 ]

98% conf interval: [ 0.0285526865799, 0.0289881977736 ]

99% conf interval: [ 0.0285294482102, 0.0290114361432 ]



**statistic : SNR Policy Video Conferencing.Packet Delay Variation'**

sample mean : 0.000512594497923

variance : 3.24221915586E-009

standard deviation : 5.69404878435E-005

80% conf interval: [ 0.000504986335619, 0.000520202660227 ]

90% conf interval: [ 0.000502829027426, 0.00052235996842 ]

95% conf interval: [ 0.000500959043713, 0.000524229952133 ]

98% conf interval: [ 0.000498782145214, 0.000526406850632 ]

99% conf interval: [ 0.000497308123132, 0.000527880872714 ]

**statistic : RMPA. Video Conferencing.Packet Delay Variation'**

sample mean : 0.00028496801618

variance : 4.25640294247E-010

standard deviation : 2.06310517E-005

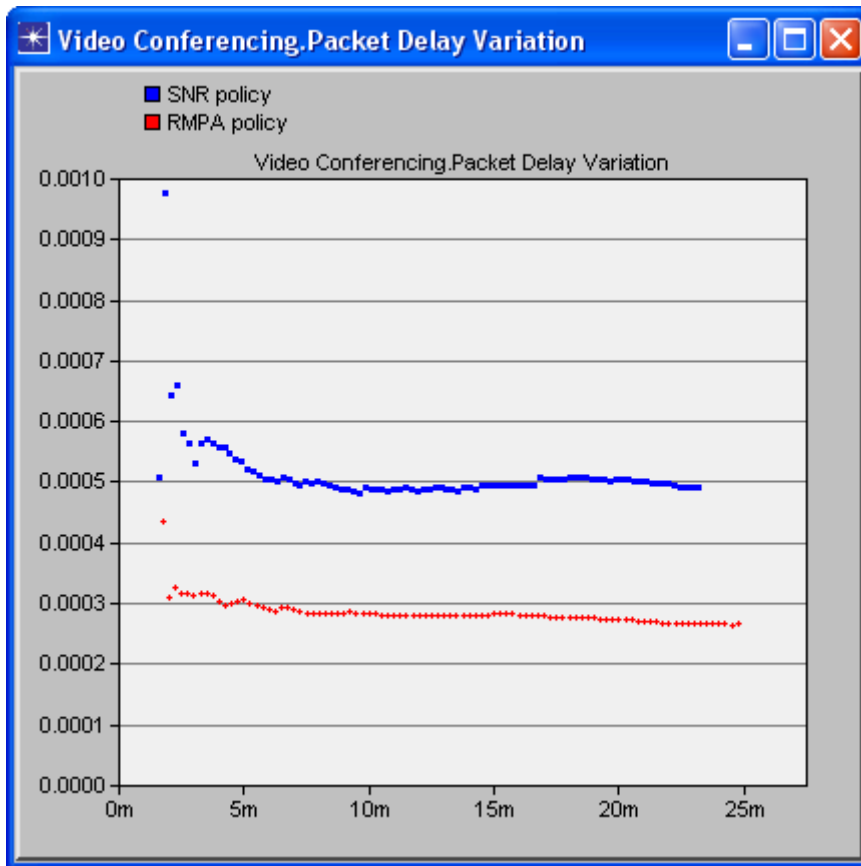
80% conf interval: [ 0.000282211376822, 0.000287724655537 ]

90% conf interval: [ 0.000281429726742, 0.000288506305617 ]

95% conf interval: [ 0.000280752181956, 0.000289183850403 ]

98% conf interval: [ 0.000279963433788, 0.000289972598572 ]

99% conf interval: [ 0.000279429356422, 0.000290506675938 ]



**UPLINK PACKET DROP rate**

**statistic : SNR. WiMAX.Throughput (packets/sec)**

sample mean : 449.39031339

variance : 20,162.054825

standard deviation : 141.993150627

80% conf interval: [ 431.100793839, 467.679832942 ]

90% conf interval: [ 425.914767462, 472.865859319 ]

95% conf interval: [ 421.419450156, 477.361176624 ]

98% conf interval: [ 416.186329979, 482.594296802 ]

99% conf interval: [ 412.642878274, 486.137748507 ]

**statistic : RMPA policy: WiMAX.Throughput (packets/sec)'**

sample mean : 501.578

variance : 29,490.8937827

standard deviation : 171.729129104

80% conf interval: [ 479.458318519, 523.697681481 ]  
90% conf interval: [ 473.186242794, 529.969757206 ]  
95% conf interval: [ 467.749523329, 535.406476671 ]  
98% conf interval: [ 461.420491494, 541.735508506 ]  
99% conf interval: [ 457.134975802, 546.021024198 ]

**statistic : SNR policy WiMAX PHY.Uplink Packets Dropped (packets/sec)'**

sample mean : 0.596866096866

variance : 0.0667385004992

standard deviation : 0.258337957914

80% conf interval: [ 0.563590709206, 0.630141484526 ]

90% conf interval: [ 0.554155412799, 0.639576780933 ]

95% conf interval: [ 0.545976771169, 0.647755422563 ]

98% conf interval: [ 0.536455793754, 0.657276399978 ]

99% conf interval: [ 0.530008947035, 0.663723246697 ]

**statistic : RMPA policy WiMAX PHY.Uplink Packets Dropped (packets/sec)'**

sample mean : 0.654666666667

variance : 0.0711448888889

standard deviation : 0.266729992481

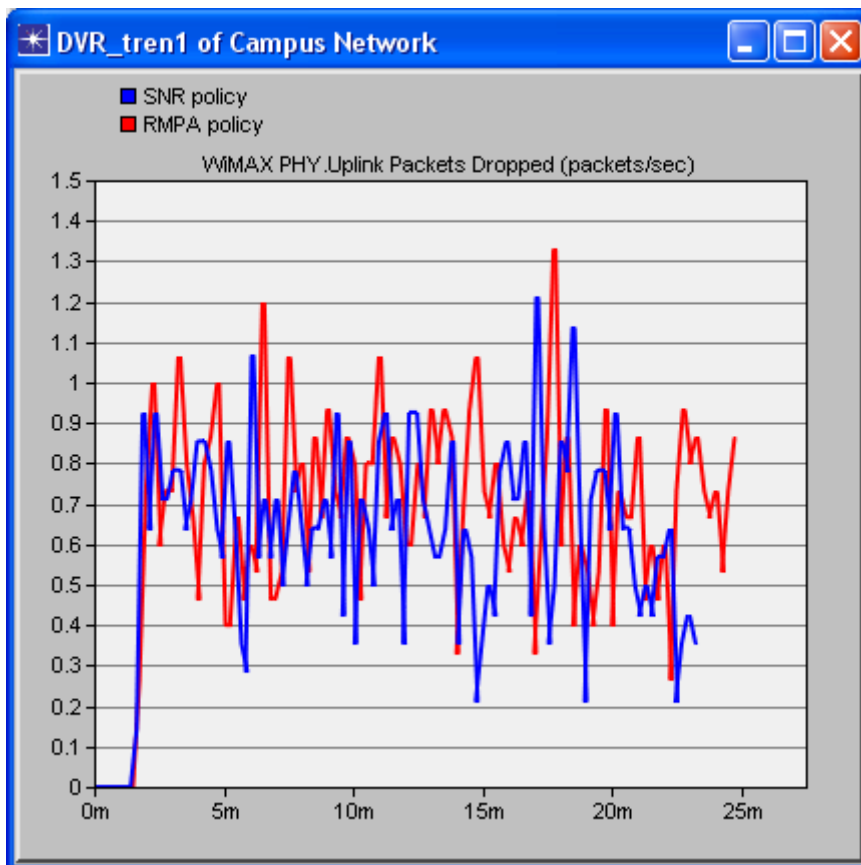
80% conf interval: [ 0.62031033757, 0.689022995763 ]

90% conf interval: [ 0.610568538261, 0.698764795072 ]

95% conf interval: [ 0.602124215801, 0.707209117532 ]

98% conf interval: [ 0.592293952162, 0.717039381171 ]

99% conf interval: [ 0.585637681473, 0.72369565186 ]



**statistic : SNR Policy WiMAX.Delay (sec)'**

sample mean : 0.0288810362596

variance : 1.21307833385E-005

standard deviation : 0.0034829274093

80% conf interval: [ 0.0284181700818, 0.0293439024374 ]

90% conf interval: [ 0.0282869235392, 0.0294751489801 ]

95% conf interval: [ 0.0281731572736, 0.0295889152457 ]

98% conf interval: [ 0.0280407188939, 0.0297213536253 ]

99% conf interval: [ 0.0279510421836, 0.0298110303357 ]

**statistic : RMPA Policy WiMAX.Delay (sec)'**

sample mean : 0.0242954964422

variance : 5.20322539224E-006

standard deviation : 0.0022810579546

80% conf interval: [ 0.023992353582, 0.0245986393025 ]

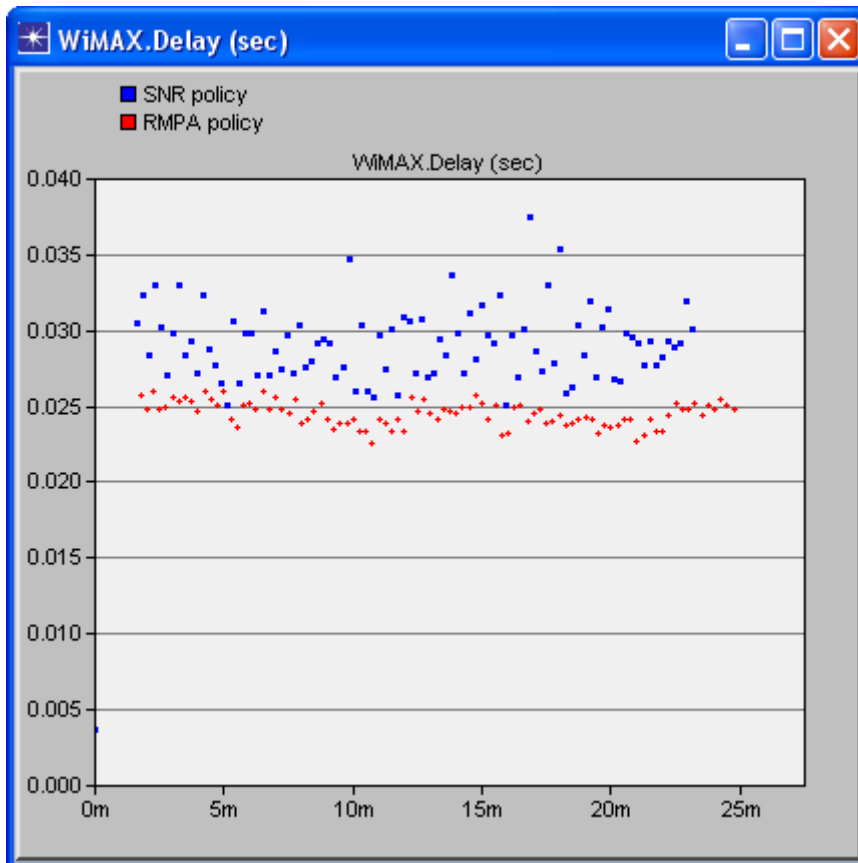
90% conf interval: [ 0.0239063968753, 0.0246845960092 ]



95% conf interval: [ 0.0238318884475, 0.024759104437 ]

98% conf interval: [ 0.0237451511763, 0.0248458417082 ]

99% conf interval: [ 0.0236864196125, 0.024904573272 ]



**statistic : SNR policy WiMAX Mobility.Handover Delay (seconds)'**

sample mean : 0.0221428571428

variance : 6.12244897956E-006

standard deviation : 0.00247435829652

80% conf interval: [ 0.0206882374787, 0.023597476807 ]

90% conf interval: [ 0.0201801307488, 0.0241055835369 ]

95% conf interval: [ 0.0196710138663, 0.0246147004194 ]

98% conf interval: [ 0.0189679476953, 0.0253177665904 ]

99% conf interval: [ 0.0183982216602, 0.0258874926255 ]

Original vector : video\_conference\_1\_tren-1tren\_1cam\_vv\_despliegue\_bridging1\_vel100-

**statistic : RMPA.WiMAX Mobility.Handover Delay (seconds)'**

sample mean : 0.0214285714286

variance : 5.10204081632E-006

standard deviation : 0.00225876975726

80% conf interval: [ 0.0201006914241, 0.022756451433 ]

90% conf interval: [ 0.0196368555615, 0.0232202872956 ]

95% conf interval: [ 0.0191720975599, 0.0236850452972 ]

98% conf interval: [ 0.0185302888911, 0.024326853966 ]

99% conf interval: [ 0.0180102025561, 0.024846940301 ]

