**Motivation For Channel Allocation in WLAN**

|  |  |
| --- | --- |
| **Standard** | IEEE802.11n |
| **No. of Packets aggregate** | 1 |
| **Transmitter Power** | 100 |
| **Antenna Gain** | 0 |
| **Antenna Height** | 1 |
| **Frequency** | 2.4 |
| **Standard** | 1\_2412 |
| **Reference Distance** | 1 |
| **Bandwidth** | 20 |
| **Transmitting Antennas** | 1 |
| **Receiving Antennas** | 1 |
| **Guard Interval** | 400 |

|  |  |  |  |
| --- | --- | --- | --- |
| Sample | Throughput (Mbps) | | |
| **AP\_1** | **AP\_2** | **AP\_3** |
| All APs on the same channel | | | |
| 1 | 8.45 | 8.28 | 8.63 |
| 2 | 9.99 | N/A | 10.00 |
| 3 | 9.99 | 9.99 | 9.99 |
| 4 | N/A | 10.00 | 9.99 |
| 5 | N/A | 10.00 | N/A |
| Each AP on a different non-overlapping channel | | | |
| 1 | 9.99 | 10.00 | 9.99 |

**Sample-1: Change PathLoss\_Exponent to 5**

|  |  |  |
| --- | --- | --- |
| Device Name | **X** | **Y** |
| AP\_1 | **15** | **0** |
| AP\_2 | **15** | **5** |
| AP\_3 | **15** | **10** |
| **Wireless\_Node\_6** | **40** | **0** |
| **Wireless\_Node\_7** | **40** | **5** |
| **Wireless\_Node\_8** | **40** | **10** |

**Sample-2,3,4,5 & Each AP on a different non-overlapping channel :**

Changes done as follow PathLoss\_Exponent to 3.7

|  |  |  |
| --- | --- | --- |
| Device Name | X | Y |
| AP\_1 | 400 | 0 |
| AP\_2 | 400 | 100 |
| AP\_3 | 400 | 200 |
| Wireless\_Node\_6 | 500 | 0 |
| Wireless\_Node\_7 | 500 | 100 |
| Wireless\_Node\_8 | 500 | 200 |

|  |  |  |  |
| --- | --- | --- | --- |
| Sample | Throughput (Mbps) | | |
| **AP\_1** | **AP\_2** | **AP\_3** |
| All APs on the same channel | | | |
| 1 | 1.75 | 1.85 | 1.77 |
| 2 | 5.77 | N/A | 5.77 |
| 3 | 5.42 | 0.42 | 5.42 |
| 4 | N/A | 3.21 | 3.20 |
| 5 | N/A | 5.77 | N/A |
| Each AP on a different non-overlapping channel | | | |
| 1 | 5.77 | 5.77 | 5.77 |