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Exploring RSSI Dependency on Height in UHF for throughput optimisation

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ABSTRACT:

This paper considers exploiting the unique outdoor propagation characteristics of the Ultra High Frequency (UHF) band to optimise wireless network deployments. The relationship existing between signal strength and antenna height in UHF band is analysed. Received signal strength increases steadily with an increase in receiver antenna height up to about 8.5 m above ground, which can be explained in part by the resulting effect of Fresnel zone and obstacle clearance such as typical house height in the area. When raised beyond 8.5 m further signal strength gain stifles, possibly due to effects of multi-path fading. The contribution of this paper is firstly, the implication of Received Signal Strength Indicator (RSSI) dependency on height and secondly, the consideration of throughput corresponding to RSSI thresholds.