

## ABSTRACT

In planning the installation of *wireless* networks, it is important to consider the effect of rain to achieve optimal network quality. Therefore, this study aims to calculate and analyze the effect of rain on *wireless* network installation planning. The location of the calculation was carried out in the Tangerang Regency area. Rainfall data is obtained from the meteorological, climatological and geophysical agency (BMKG) data in the form of daily rainfall. Simulation of *wireless* network installation planning using UISP (*Ubiquiti Internet Service Provider*). From the results of the analysis of the conditions carried out in the simulation process, the conditions on the *client* with the object of research obtained in each *client*. Almost all *clients* connected to *access point* 1 are close to the *expected signal* value so that they can be categorized as very good. Only *client* 3 has the highest average calculation value of -66.75 dBm with attenuation reaching  $1.79 \times 10^{-3}$  dBm which causes the average value of the calculation results to have the farthest difference of -0.75 dBm when compared to the *expected signal* value.

While at *access point* 2 only *client* 7 gets the lowest average value of measurements and calculations compared to *clients* 6 and 8, if you look back it can be seen that *client* 7 has the same attenuation as *client* 8, namely  $1.38 \times 10^{-3}$  dBm but the signal quality of *client* 7 is lower than *client* 8, this is due to the condition of the *fresnel zone* on *client* 7 touching the barrier at a distance of 0.5 m so that it affects the quality of the signal emission between the *client* to the *access point* on the *wireless* network connection, this causes a difference in the *signal* strength value between *clients* 7 and 8. The difference in the average value of the calculation results is -10.7514 dBm when compared to the *expected signal* value (-67 dBm). Rainfall can cause the antenna to get wet so that the antenna attenuation becomes high and affects the signal strength of the *wireless* network.

**Keywords:** *Wireless Network, Rainfall Calculation, Rainfall Influence*