



DEVELOPMENT OF AN ANFIS-BASED QOS MODEL FOR A GSM SERVICE PROVIDER (MTN NIGERIA KANO REGION NETWORK)

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ABSTRACT

MTN Nigeria is one of the leading GSM service providers in Nigeria with 40 million subscribers and as such Quality of Service (QoS) is of vital importance. Due to the mobility of subscribers and the complexity of radio waves in propagation, the radio part (GSM Capacity) is mostly the decisive factor affecting the Quality of Service of the GSM network. GSM Logical Control channels data obtained from May 2006 to December 2009 from MTN, Kano Region, were partitioned into training data set (142 data pairs represents 75% of the entire data) and checking data set (48 data pairs represents 25% of the entire data). Data obtained from January to March 2010 were used as validation data. The developed Adaptive Neuro Fuzzy Inference System (ANFIS) model was tested for Quality of Service on Logical Control Channel variables using Average Percentage Error (APE) and Performance comparison of data distribution.

Key words: ANFIS, APE, logical control channels, mobility, and QoS.

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