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RESEARCH ARTICLE

PATH LOSS PREDICTION FOR GSM MOBILE NETWORKS FOR URBAN REGION OF ABA, SOUTH-EAST NIGERIA

NWALOZIE GERALD .C¹, UFOAROH S.U², EZEAGWU C.O³, EJIOFOR A.C⁴

^{1,2,3} Department of Electronic and Computer Engineering, Nnamdi Azikiwe University Awka,
Anambra State Nigeria

⁴ Department of Industrial Production Engineering, Nnamdi Azikiwe University Awka,
Anambra State Nigeria

ABSTRACT

Propagation path loss greatly impact on the quality of service of a mobile communication system. To establish any mobile communication system, the basic task is to foresee the coverage of the proposed system in general, and the accurate determination of the propagation path loss leads to development of efficient design and operation of quality networks. Many such different approaches have been developed, over the past, to predict coverage using what are known as propagation models. However, such models, no matter how accurate, will result in co-channel interference and wastage of power when they are used in environments for which they were not developed. So, the best bet is to perform site-specific measurements. This paper presents a measurement-based path loss model, from experimental data collected in Aba urban, South-East Nigeria. Received Signal Strength (RSS) measurements were gathered in Aba from GlobalCom Limited (GLO) Network operating at 900MHz. The results of the measurements were used to develop path loss model for the urban environment, the result shows that the path loss for the measurement environment increases by 3.10dB per decade.

KEYWORDS: Base Station, Path Loss, Propagation, Model, GSM.

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