

**ENHANCEMENT OF TRANSMISSION RATE WITH
EFFICIENT BANDWIDTH USING DIVERSITY
TECHNIQUE FOR OFDMA RESOURCE ALLOCATION**

**This thesis is presented in partial fulfilment for the award of the Master of Science
in Telecommunication and Information Engineering**

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ABSTRACT

MIMO-OFDMA (Multiple Input Multiple Output-Orthogonal Frequency Division Multiple Access) resource allocation is examined in this paper. The considered issue is to give each user more information rate in wireless communication system. The objectives of this research focus on the transmission rate on how to maintain or increase the data rate with efficient bandwidth by using advanced multiple access techniques such as orthogonal frequency division multiple access. Diversity technique is also applied to produce the best for maximum achievement diversity between space time diversity, space frequency diversity, space time-frequency diversity and delay diversity. The simulation shows that by applying delay diversity technique will achieve the maximum diversity order in MIMO-OFDMA system for better BER performance. The percentage of improvement using delay diversity shows it increase approximately 20%. It does really improve the BER performance with maximum diversity order and bandwidth efficiency.

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