EVALUATE THE PERFORMANCE OF DECISION-DIRECTED CHANNEL ESTIMATION (DDCE) BY USING THE DIVERSITY TECHNIQUES

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In the name of ALLAH,
Most Compassionate, the Merciful,
Praise to ALLAH, Lord of the Universe.

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ABSTRACT

Channel estimation is a one of important technique to improve the performance of Orthogonal Frequency Division Multiplexing (OFDM), and the Decision-Directed (DD) channel estimation is focus on this paper because of the ability of decreasing bit error rate (BER) in the OFDM performance. Decision-Directed channel estimation based on least square error (LSE) was proposed, and it is experimented in the white Gaussian noise channel and multipath Rayleigh channel. By implemented channel estimation, the OFDM system deals with other problem which is an effect in channel fading due to complexity. Various diversity techniques are used in OFDM system in order to combat the effects of channel fading and to improve the system performance. Diversity can be implemented in three different domains namely time, frequency and space. The simulation result shows that the Decision-Directed channel estimation adapted with diversity scheme improved the performance of OFDM system in terms of increasing SNR and decreasing BER.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

This chapter focus on a project background or overview of the project. It mention about the problem statement of the project, why the existence system is not efficient. From the problem that occurs, it comes to the solution on how to overcome the problem, to improve the system performance; this is called the objectives of project. The solution proposes on this project is used the channel estimation techniques at the receiver part in order to recover the received signal distorted by channel characteristic in the system and lastly this chapter gives the overview about the organization of the research.

1.2 PROJECT BACKGROUND

Orthogonal frequency division multiplexing (OFDM) is a method of combination of multiplexing and modulation technique. Multiplexing is a method of sharing bandwidth with other independent data channels while modulation is a mapping of the information changes in the carrier phase, frequency or amplitude or combination. OFDM has become a technique for transmission of signals widely adopted over wireless communication channels. OFDM has been adopted in several wireless standards such as digital audio broadcasting (DAB), digital video broadcasting