**EC4910: Computer Project 8**

**Blind Equalization with ZP-OFDM**

**Introduction.**

In this project we want to verify that with ZP-OFDM we can do blind equalization and determine the frequency response of the channel (apart from a multiplicative constant) without knowledge of the transmitted sequence. In principle this ambiguity can be resolved if we just know one of the MQAM symbols transmitted.

**Problem.**

The file *received\_data.mat* contains a *y* which is the received signal from a ZP-OFDM modulator through a dispersive channel and white noise. The modulator is defined by the DFT length *N=64* and Zero Prefix length *L=16.* There are no nulls and no pilots so all 64 subcarriers contain data. The SNR at the receiver is 40dB (you are not using this parameter but just to give you an idea).

Q1. Determine an estimate of the channel (apart from a multiplicative constant) and demodulate the data. Verify that the transmitted sequence is 16-QAM.

Q2. You know that in the transmitted data the very first symbol transmitted is -1.5-j1.5. Determine the correct estimate of the channel and show the correct 16-QAM demodulated data.