

AUFGABE DER MASTERARBEIT

im Studiengang „Elektro- und Informationstechnik“

für: Verfügbar
gestellt von: **Prof. Dr.-Ing. Andreas Czylik**
Thema: Performance analysis of clustered CDMA-OQAM-OFDM Networks

Code Division Multiple Access (CDMA) is used to improve the reliability of the OQAM-OFDM transmission where the original transmitted data can be spread in time or frequency domain. Although the data rate will be significantly decreased, the transmission will be more robust against interference due to the processing gain.

The performance of CDMA-OQAM-OFDM network will decrease as the network size increases due to multiuser interference. This can be overcome by grouping users into clusters and applying maximum likelihood detection (MLD) at the receiver. In this thesis, the effect of clustering in CDMA-OQAM-OFDM networks shall be studied and the performance of the clustered CDMA-OQAM-OFDM networks shall be compared with clustered CDMA-CP-OFDM networks.

The task entails the following:

- Creating a time and work plan,
- implementation of a clustered CDMA-OQAM-OFDM network using MATLAB,
- compare the performance of clustered and non-clustered CDMA-OQAM-OFDM networks,
- compare the performance of clustered CDMA-OQAM-OFDM with clustered CDMA-CP-OFDM networks,
- documentation of the work,
- final presentation of the work, and
- submitting a digital copy of documentation and presentation in PDF format.

Zweitgutachter: Prof. Dr.-Ing. Jan C. Balzer

Duisburg, _____

Betreuer: _____

Prof. Dr.-Ing. A. Czylik