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## - Master/Diploma thesis -

### QIM and Patchwork Embedding for a Watermark Encoding Algorithm

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#### CASED

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#### Motivation & Goal

Digital Watermarking is an accepted technology to discourage illegal distribution of multimedia. Using a traitor tracing scheme such as Transaction Watermarking one is able to trace a distributed copy back to the responsible person. Therefore a bit code, the watermark message, has to be integrated into a copy of the original multimedia file. Several embedding strategies, e.g. QIM, Patchwork, are available, but it is still unclear which impact the chosen strategy has on the resistance against Collusion Attacks. Here several watermarked copies of the same content are compared in order to detect the positions of the watermark message. The goal of this thesis is to implement the so called QIM embedding strategy together with an existing theoretical encoding/decoding algorithm to resist Collusion Attacks into an already operating watermarking application for audio files. Afterwards a large scaled testbed comparing this strategy to the already implemented Patchwork embedding strategy according to their resistance against Collusion Attacks should be designed and evaluated.

#### Tasks

Details of generation and implementation are to be discussed

- Analysis of QIM- and Patchwork-Embedding strategy for audio
- Implementation of QIM embedding strategy and of an encoding/decoding algorithm to resist Collusion Attacks
- Design and Evaluation of a significant testbed to compare QIM and Patchwork embedding

#### Requirements

- Programming skills in C,C++, (Matlab)

#### Contact

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