Abstract

Raw digital video requires an extremely large amount of data. In order to reduce the data needed to store or transmit a video, compression techniques are employed to reduce the size of video without significantly impacting video quality. Two of these techniques are transform coding and motion compensation.

In this thesis, a full search motion compensation algorithm is implemented both in Python and on an integrated circuit. Functionality of the circuit was verified via waveform analysis. A testbench with a typical use case of the circuit showed that the expected motion vectors were produced by the integrated circuit.