

# Multimedia Encryption, Transmission and Authentication

Edited by

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# Chapter 12

## H.264/AVC Video Coding Tools and Functions

Sinzobakwira Issa, Othman O. Khalifa and Aisha-Hassan Abdulla

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### 12.1. Introduction

The H.264/AVC standard offers a wide range of coding tools to achieve a high level of compression efficiency. Some of the important coding tools and functions of the H.264/AVC standard will be briefly discussed in this section. The encoder process, starting from the input video to the bit stream output, is presented by Figure 1. In intra prediction, the current macroblock is predicted from the neighbouring samples in the current slice which have been encoded, decoded and reconstructed by the encoder. By contrast, in inter prediction, the prediction signal is obtained through motion estimation and compensation using one (or two) reference picture(s) from the reference picture buffer. The reference picture buffer contains previously coded and decoded pictures that can be selected for inter prediction.

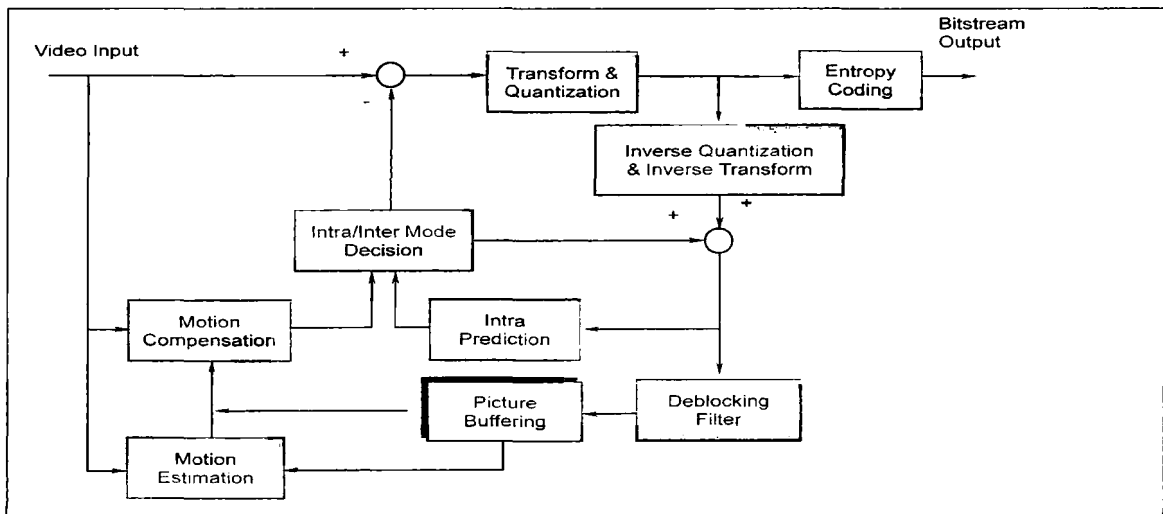


Figure 12.1. Functional block diagram of H.264 encoder

The prediction macroblock is then subtracted from the original macroblock to create a residual macroblock. The residual macroblock is transformed, quantised and reordered before