

# Multimedia Encryption, Transmission and Authentication

Edited by

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International Islamic University Malaysia

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INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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## Chapter 9

### FAST MODE DECISION ALGORITHM

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#### 9.1. INTRODUCTION

Fast mode decision is the developed algorithm intended for selectively choosing the mode decision used by the encoder. The default is the scalable video coding model which is represented by Joint Scalable Video Model (JSVM). It has many mode decisions which are involved during the encoding process. The mode decisions are applied for motion prediction, either intra or inter prediction. Mode decisions in scalable video coding are the features which are available in previous video coding standard and some added features which are in line with scalability.

The added features in SVC provides the scalability standard to reach the significant coding and capability to deal with many network condition, e.g. wired and wireless network, as well as the number of video applications [1].

#### 9.2. MODE DECISION IN SCALABLE VIDEO CODING

The supported mode decisions for scalable video coding are available for inter-prediction mode and intra-prediction mode. These intra-prediction and inter-prediction are for base layer. For inter-prediction mode, there are seven features of macroblock, such as MODE\_16×16, MODE\_16×8, MODE\_8×16, MODE\_8×8, MODE\_8×4, MODE\_4×8, and MODE\_4×4. For intra prediction, there are nine prediction modes for INTRA\_4×4, and four prediction modes for INTRA\_16×16 and MODE\_SKIP. For enhancement layers, two more modes are added, base\_layer\_mode and qpel\_refinement\_mode. These two modes indicate motion and prediction information including the partitioning of the corresponding macroblock of the base layer [2]. The new added features in scalable video coding provide the higher complexity for encoder than the previous video coding standard [3]. The