CHAPTER II
BASIC THEORY

II.1 Digital Watermarking Process

Digital watermarking has some process. First choose a picture that want to be embedded with watermark. After that with algorithm the image RGB Channels will be decomposed. The main aim why needs to be decomposed because to make the watermark easy to embed in the picture. After the picture decomposed, it will be embedded between the image and the watermark. The process of embedding will use a good algorithm of embedding to hidden a watermark information inside a picture. The watermark can also be visible watermark instead invisible watermark. For the full process, see the figure below.
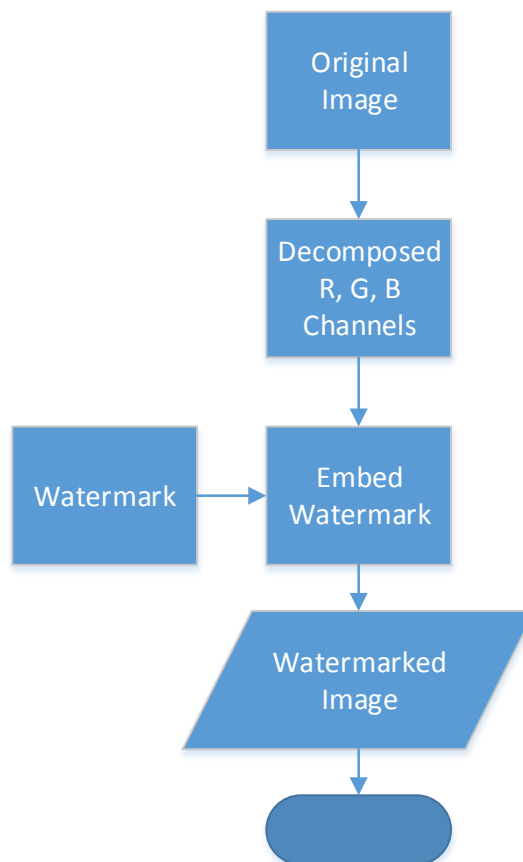

Figure 2.1 Flowchart Digital Watermarking Process

II.2   Arnold Transform Scrambling Algorithm

Arnold Transform Algorithm is a technique of two-dimensional mapping which transform each coordinate (x,y) in the logo image to new coordinate (x',y').

The function of Arnold Transform algorithm is to increase the security of picture which ready to be embedded with watermark. Because it will mapping from original coordinate into the new coordinate.

II.3   Haar Wavelet Transform

Haar Wavelet Transform is one of wavelet transform implementation which use a discrete set of the wavelet scales and translations obeying some defined rules. This transform decomposes the signal into mutually orthogonal set of wavelets, which is the main difference from the continuous wavelet transform (CWT), or its implementation for the discrete time series. It can be called discrete-time continuous wavelet transform (DT-CWT).