ABSTRACT

In an effort to protect the copyright of a three-dimensional object, it is needed an algorithm to insert the secret information that is not visible by the human sight, but can be detected by a medium, such as computer. Therefore watermark is a best solution for the problem above.

The method that is used to embed a watermark into a 3-dimensional object is a method of connected vertices clustering and star topology, where the three dimensional object is divided into several star topology based on the interconnected vertices. There are some edges that are selected by PN sequence to be embedded by watermark. Watermark is embedded in the vertices of the selected edges.

The results of the simulations is obtained a good imperceptibility because the value of MSE and VER is close to 0 and the value of SNR is big enough. The 'terompet' host that be embedded by watermark 'nama' has the smallest MSE and VER with the MSE value is 0.000000569 and the VER value is 0.036355. This host also has the highest SNR with the value of SNR is 111.831. Beside it, the watermark can be extracted with a very good after being attacked by rotation, scaling, translation, and the combination of scalling and translation with the BER value is 0. This scheme is not robust against cropping attack.

keyword : watermarking, 3D, star topology, spacial