**DWT-SVD based Dual Watermarking Scheme**

**ABSTRACT**

In the recent years, Digital Watermarking is used for copyright protection and authentication. In this paper, a new Dual Watermarking Scheme based on DWT-SVD is presented to improve the robustness and protection. Both Discrete Wavelet Transform (DWT) and Singular Value Decomposition (SVD) have been used as a mathematical tool to embed watermark in the image. In the proposed technique, two watermarks are embedded in the host image. First watermark is called primary watermark, which is a gray scale digital image. Second watermark is called secondary watermark which is a gray scale meaningful logo instead of randomly generated Gaussian noise type watermark. The secondary watermark is embedded into primary watermark and the resultant watermarked image is used as watermark for the host image. A reliable watermark extraction scheme is developed for the extraction of the primary as well as secondary watermark from the distorted image. Experimental evaluation demonstrates that the proposed scheme is able to withstand a variety of attacks. The secondary watermark is easy to detect in all the cases but sometimes primary one is severely distorted.