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A Dual Security Approach for Image Watermarking using AES and DWT

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Abstract— **This paper proposes multimedia authentication and tamper detection scheme with the security of AES (Advanced Encryption Standard) ciphered watermarking and hash function. The algorithm embeds two watermarks in the host image for authentication and tamper detection. We first used unique identification Code (UIC) as first robust watermark which is then embedded using the 2-level discrete wavelet transform (DWT). Hash code of host image is calculated and used as secondary watermark for tamper detection. This method is blind in nature. We performed several security attacks like compression attack, noise attack and cropping attack on watermarked host image and evaluated the proposed watermarking technique to examine the system robustness. Performance is recorded on the basis of PSNR and SSIM values.**

Keywords—**AES, PSNR, SSIM, UIC, Tamper Detection, Hash function.**