

**GENERIC LOSSLESS VISIBLE WATERMARKING -A
NEW APPROACH**

**A Project Report Submitted in The Partial Fulfillment of the
Requirement for The Award of the Degree Of**

**BACHELOR OF TECHNOLOGY
IN
ELECTRONICS AND COMMUNICATION ENGINEERING**

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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION
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AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
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(2015-2019)

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BONAFIDE CERTIFICATE

This is to certify that this project work entitled "GENERIC LOSSLESS VISIBLE WATERMARKING—A NEW APPROACH" is the bonafide work carried out by P TARUN KUMAR (15811A0457), B MOUNICA JYOTHI (15811A0406), CH SAI HARI KRISHNA (15811A0415), M HARI KALYAN (15811A0444), M NANI BABU (15811A0446) submitted in Partial fulfillment of the requirement for the Award of **Degree of Bachelor of Technology in ELECTRONICS AND COMMUNICATION ENGINEERING**, during the year **2015-2019**.

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ABSTRACT

A novel method for generic visible watermarking with a capability of lossless image recovery is proposed. The method is based on the use of deterministic one-to-one compound mappings of image pixel values for overlaying a variety of visible watermarks of arbitrary sizes on cover images. The compound mappings are proved to be reversible, which allows for lossless recovery of original images from watermarked images. The mappings may be adjusted to yield pixel values close to those of desired visible watermarks. Different types of visible watermarks, including opaque monochrome and translucent full color ones, are embedded as applications of the proposed generic approach. A two-fold monotonically increasing compound mapping is created and proved to yield more distinctive visible watermarks in the watermarked image. Security protection measures by parameter and mapping randomizations have also been proposed to deter attackers from illicit image recoveries. Experimental results demonstrating the effectiveness of the proposed approach are also included.