

# High-Capacity Reversible Data Hiding Scheme Using Dual Color Image Through (7, 4) Hamming Code

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## Abstract

Achievement of high-capacity data hiding with good visual quality is an important research issue in the field of steganography. In this paper, we have introduced a new dual color image-based reversible data hiding scheme through (7, 4) Hamming code and shared a secret key. We partitioned the color image into  $(3 \times 3)$  pixel blocks and then decomposed into three basic color blocks. Again each color blocks are sliced up to 4-bit plane starting from LSB plane. Now, a segment of 3-bit secret data is embedded within each bit plane depending on a syndrome calculated using (7, 4) Hamming code. As a result, 36-bit secret data can be embedded within a  $(3 \times 3)$  pixel block. Therefore, we achieve a high payload good visual quality stego compared with existing schemes. Dual stego images are generated to achieve reversibility in (7, 4) Hamming code-based data hiding. The secret data and the original cover image both are successfully retrieved and recovered from dual stego images.

## Keywords

Steganography Hamming code Least significant bit (LSB) Bit plane

Reversible data hiding Dual image

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