Hybrid Domain based Steganography using BPS, LSB and IWT

Abstract

The Steganography used to transport information from one place to other place through public channel in covert way. In this paper we propose Hybrid domain Steganography using BPS, LSB and IWT (HSBLI). The payload is decomposed into two equal parts say part 1 and part 2. The cover and payload (PL) part 1 pixel intensity value are observed and if intensity values are more than or equal to 128 then Bit Plane Slicing (BPS) algorithm is used to embed payload in to cover image. If the intensity values of cover image and PL part 1 are less than 128, square root is applied to compress 8 bit pixel length to 4 bit pixel length and LSB technique is used to replace PL part 1 value by cover image LSB values. The BPS stego object is merged with LSB stego object to obtain intermediate stego object. The IWT is applied on intermediate stego object to derive four sub bands. The PL part 2 is considered and embedded into LL sub band of intermediate stego object using LSB replacement method to obtain final stego object. The inverse IWT is applied on final stego object to get stego image in spatial domain. The payload is extracted at the destination by applying reverse process of embedding. It is observed that the values of PSNR better in the case of proposed algorithm compare to existing algorithms.
Hybrid Domain based Steganography using BPS, LSB and IWT

- Siva Janakiraman, Anitha Mary A and Jagannathan Chakravarthy, &quot;Pixel Bit Manipulation for Encoded Hiding - An Inherent stego,&quot; International Conference on Computer Communication and Informatics pp. 1-6 Jan 2012.

**Index Terms**

Computer Science  
Information Security

**Keywords**

Steganography  
BPS embedding  
IWT  
Payload  
Cover Image