

Mathematical Model That Using Scrambling and Message Integrity Methods in Audio Steganography

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Abstract : The success of audio steganography is to ensure imperceptibility of the embedded message in stego file and withstand any form of intentional or un-intentional degradation of message (robustness). Audio steganographic that utilized LSB of audio stream to embed message gain a lot of popularity over the years in meeting the perceptual transparency, robustness and capacity. This research proposes an XLSB technique in order to circumvent the weakness observed in LSB technique. Scrambling technique is introduced in two steps; partitioning the message into blocks followed by permutation each blocks in order to confuse the contents of the message. The message is embedded in the MP3 audio sample. After extracting the message, the permutation codebook is used to re-order it into its original form. Md5sum and SHA-256 are used to verify whether the message is altered or not during transmission. Experimental result shows that the XLSB performs better than LSB.

Keywords : XLSB, scrambling, audio steganography, security

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