

ABSTRACT

Strengthening iNormals using context based NLG.

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NORMALS or Normal Linguistic Methodology Steganography is a steganography method based on the noiseless steganography paradigm or Nostega. NORMALS used external input to embed a message into cover text by changing the external input of an NLG system (Natural Language Generation). There are a few points in the NORMALS that can be improved to extend it such as embedding capacity, the security of representing the number of code digits, and the naturalness of the sentences. To take advantage of these opportunities, this research proposed some methods. Embedding capacity can be increased by reducing the number of sentences for representing the shifting code, the security level for representing the number of code digits can be increased by using the private key, and the naturalness of those sentences can be increased by improving the naturalness using sentence paraphrasing based on the context. In general, the message embedding capacity of the proposed method gave increasing if the secret message contained the shifting code. The experiment results from 300 messages shown 100 messages that could be embedded in the proposed method but not in the previous method. Based on 30 respondents of Bahasa Indonesian assessed naturalness of sentences in the cover text improved by showing the average of naturalness sentences percentage of Andre's method is 98.61%, but proposed method is 99.89% that greater than Andre's method. The probability for guessing the number of code digits in proposed method could be $\frac{1}{36}$, while the probability for guessing the number of code digits in the previous method is 1.

Keywords: Noiseless Steganography, Natural Language Generation, Naturalness, Private Key.