Voice-Over-IP

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Abstract: *A type of IP network-based digital transmission technology is voice-over-IP (VoIP) technology. Using VoIP voice service as a steganographic carrier is one of the key strategies for ensuring secure transmission. A new method of information concealment called steganography in dormant Voice-over-IP frames allows for high steganographic capacity while still maintaining excellent imperceptibility. The entropy-based and poker test-based steganalysis methods have been presented to prevent the improper application of this technology.However, when there are few inactive frames or low embedding rates, the detection performance of these two approaches is not as good.So, based on fundamental frequency statistics, we provide a novel steganalysis technique This leads to the proposal of a steganographic method that combines the F5 and simplified wet paper code (SWPC) algorithms.The fundamental concept is to utilise the F5 technique to secretly encode each row of the carrier matrix, after which the SWPC algorithm is used to encode the columns in accordance with the wet and dry properties of the wet paper code without impacting the previous row embedding results. We test the suggested strategy using VoIP streams encoded with the ITU-T G.729a codec as a carrier. The experimental findings show that the suggested system outperforms F5-WPC and SWPC approaches and can produce considerably superior IP voice data steganographic transparency.*

Keywords: Wet paper code, streaming video, voice over IP, and the F5 algorithm

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