Multifactor Authentication Scheme for Wireless H.264/AVC Video Streaming

Abstract

Wireless communication channels are grown tremendously. Multimedia applications are using different wireless communication channels. Multimedia content verification and endorsement has become a rising issue for continuous video streaming. Especially this is a major issue over lossy/congested networks, which refers the network gives a lot of Timeout errors when packets are transmitted over it. Even though, several video coding standards are introduced to reduce the data size on the communication channel, the dependency of coding created new challenges and issues. Such video coding standards such as H.261, CCIR 723, MPEG-1 and MPEG-2 H.264/AVC has several challenges in inventing effective authentication scheme. In this proposal, we propose a multifactor authentication scheme that integrates authentication into source and channel coding components such as coderate, conventional length, which helps to efficiently address the coding reliance and to design the optimal rate allocation scheme for the sake of end-to-end video quality. The proposed multifactor authentication framework is able to authenticate the video streaming with low communication overhead. In general, the quality will get affected by the noise in wireless channel and unsuccessful authentication. We proposed a
new channel, source and receiver authentication scheme named as VAP (Video Authenticity Protection). VAP provides continuous authentication with H.264 coding and channel rate allocation schemes. The experimental results on H.264/AVC video streaming confirm the effectiveness of this VAP and demonstrates that comparison with other video authentication schemes.

References


Index Terms

Computer Science        Wireless
Keywords

Multifactor authentication, Multimedia authentication, digital signature, stream authentication, wireless media communication, H.264 video streaming.