Abstract

Title: High Level Securing Data Transformation Using Network Concepts

This paper presents a novel encryption-less algorithm to enhance high level security in transmission of data in networks. The algorithm breaks the transformed data into multiple parts. Then these parts are packaged into packets and sent to the receiver. A secure and efficient mechanism is provided to convey the information that is necessary for obtaining the original data at the receiver-end from its parts in the packets, that is, for solving the 'jigsaw puzzle'. The algorithm is designed to provide information-theoretic (that is, unconditional) security by the use of a one-time pad like scheme so that no intermediate or unintended node can obtain the entire data. A parallelizable design has been adopted for the implementation. An authentication code is also used to ensure authenticity of every packet.