

Abstract

Error correcting coding is an effective technique of detecting and correcting errors which may occur due to environmental interference or physical defects such as human errors in the communication channels. The International Standard Serial Number code is internationally used for identifying the title of serial publications. This paper analyzes the efficiency of the international standard serial number code as an error correcting scheme. Moreover, the paper explores on the factors which affect the efficiency of any error correcting scheme. The study utilizes weight checksum technique to detect and correct error(s) in a code word. It is clear that ISSN code is not an efficient error coding scheme. ISSN code is only reliable in error detection. ISSN code can detect any error in the code iff the weight checksum equation does not hold. However, the code does not detect silent errors. The study develops a new efficient and robust modified ISSN code that is efficient in error detection and correction capabilities. The code has dual mechanism for error detection and correction in a code word. If the weight checksum equation does not hold and secondly, if the conditions for the generating equation do not hold. Modified ISSN code can detect and correct silent errors in a code word. Modified ISSN code is an efficient error coding scheme for it is efficient in error detection and correction capabilities.