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(54) Title: RECONSTRUCTION OF SYNDROMES FOR BI-LEVEL ON-THE-FLY ERROR CORRECTION IN DISK DRIVE SYSTEMS

(57) Abstract

A method and apparatus for reconstructing syndromes in a disk drive system. In the present invention, two levels (403, 406) of handling data errors are provided. A first attempt (403) at correcting errors is performed by a dedicated error correction hardware circuit (fig. 6). The error correction is based on a syndrome which was generated as a function of the data and ECC bits. An ECC code is selected such that the syndrome produces a cyclically repeating pattern when processed in the correction hardware circuit. If the correction hardware circuit is unable to correct the error, the original syndrome value is reconstructed (405) by processing the syndrome a number of times until corresponds to the original value. The reconstructed syndrome is then used (406) by a processor under firmware control to handle the persisting errors.

