

METHOD AND APPARATUS FOR UPDATING CYCLIC REDUNDANCY CHECK INFORMATION FOR DATA STORAGE

ABSTRACT

A method (200) and apparatus (120, 122) for ensuring the integrity of data that can detect errors that remain when the data correction scheme fails to correct at least some of the errors, or has added additional errors. Reed-Solomon check symbols are used (204) for error correction and cyclic redundancy check symbols are used to detect remaining errors. Roots of generator polynomials used to generate the Reed-Solomon and cyclic redundancy check symbols meet a selected subset of a plurality of conditions. The Reed-Solomon check symbols and a deterministically altered data stream are generated based on the data portion of the data block. The cyclic redundancy check symbols are generated (202, 206) based on the deterministically altered data stream. The deterministically altered data stream is generated by performing an operation on a symbol of the data portion based on a position of the symbol within a Reed-Solomon codeword.

FIG 2a