Technology Profile Fact Sheet

Title: Method for More Efficient Processing of Binary BCH Codes

Aliases: None.

Technical Challenge: To increase the efficiency of processing binary codes of Bose, Ray-Chaudhuri and Hocquenghem (BCH codes) as used to enhance the reliability of telecommunications data.

Description: This method reduces the overall time in software for error-correction of long binary BCH codes by as much as forty percent. The algorithm converts the result of a fast binary syndrome method directly into the power-basis coefficients of the syndrome sequence, and can be constructed on-the-fly as the code parameters change. The method is particularly advantageous when error-free blocks are common, since the initial step identifies these quickly.

Demonstration Capability: There is no current means to demonstrate the method.

Potential Commercial Application(s): This method would enhance applications that use binary BCH error-correcting codes such as those that decode data transmitted over a noisy communications channel, given that the implementation allows for word-level exclusive-OR operations such as in software processing.

Patent Status: Patent application has been filed with USPTO.

Reference Number: 1506