



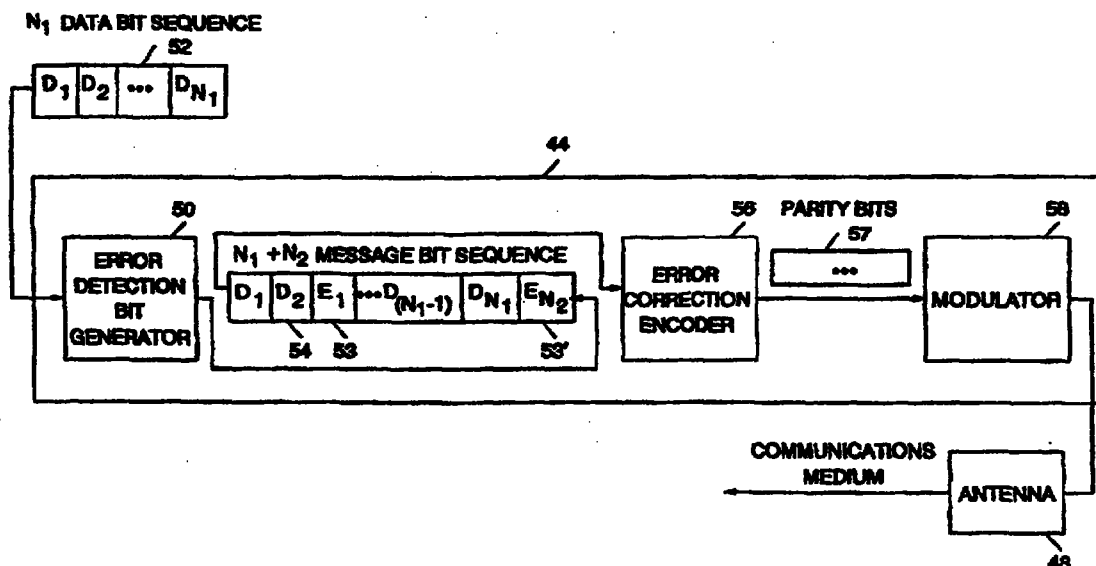
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(54) Title: DATA COMMUNICATIONS SYSTEMS AND METHODS USING INTERSPERSED ERROR DETECTION BITS



(57) Abstract

A communication system and method for communicating data bits includes generating error detection bits for interspersing within a sequence of data bits to be transmitted to provide a message to be transmitted. The interspersed data bits may be dependent on the data bits or determined independent of the data bits. The message to be transmitted is convolutionally encoded and transmitted through a communications medium. The received message is convolutionally decoded by a convolutional decoder which is operably connected to an error indication logic circuit. The interspersed error detection bits may be used to detect an uncorrected error in transmission or to constrain the convolutionally decoding to provide an improved error correction operation based on the determinate values of the interspersed error detection bits.