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In-Place Present State/Next State Registers

Abstract

There is disclosed a technique for efficiently utilizing memory in determining a next state accumulated cost in a communications system or a Viterbi decoder. The system includes a memory having an array of registers. A first present state accumulated cost is retrieved from a first storage register of the array. A second present state accumulated cost is retrieved from a second storage register of the array. A first next state accumulated cost is calculated based on the first present state accumulated cost. The first next state accumulated cost is stored in the first storage register of the array. An advantage of the invention is that such a technique requires less memory to calculate and store accumulated costs. The number of memory locations required is one for each individual state, which is substantially half of the memory locations required previously.

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