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ABSTRACT

A digital cellular telephone using a scalable channel coding scheme includes a memory arranged as a three-dimensional code book. The three-dimensional code book may receive the following three input variables:

- 5 1. The number of bit classes;
2. The number of bits per frame to be coded; and
3. The available size of the output codeword based on available channel capacity.

For each of these input variables, the three-dimensional code book may output the following scalable coding parameters:

- 10 1. The number of bits per frame are partitioned into each of the coding classes; and
2. The puncture code per class.

The invention provides the scalable coding parameters in real-time. It does this, however, without calculating the parameters in real-time. The memory may be arranged in the following manner.

A number of information bits to be coded is determined by a mode of the transmission signal. For
15 each mode, entries are maintained for each channel availability from a minimum value to a maximum values for a particular mode. For each channel availability entry, the scalable coding parameters for each bit class is maintained.

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