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(54) Title: USING CODEWORDS IN A WIRELESS COMMUNICATION SYSTEM

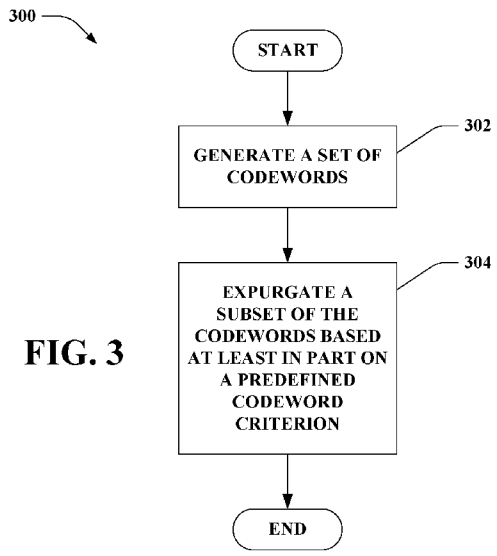


FIG. 3

(57) Abstract: Systems, methodologies, and devices are described that can facilitate bandwidth efficient non-coherent signaling for uplink control channel transmissions. A communication device (e.g., a mobile device, base station) can be configured to utilize or generate a set of complex orthogonal codewords to facilitate transmission of control channel information using non-coherent signaling in a bandwidth efficient manner. A complex orthogonal codeword set can comprise a first subset of codewords where such codewords have a desirable cross-correlation property and another subset(s) of codewords that can include expurgated codewords, where the expurgated codewords can include discarded codewords and/or codeword pairs that produce a worst-case cross-correlation property. The codeword set and subsets are determined based at least in part on a predefined codeword criterion. A portion of the discarded codewords can be used for other purposes, such as erasure decoding, interference-level estimation, and/or multi-mode control channel operation.

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