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#### (54) SYSTEM AND METHOD FOR HYBRID-ARO

(71) Applicants: MING JIA, OTTAWA (CA); JIANGLEI MA, OTTAWA (CA)

(72) Inventors: **MING JIA**, OTTAWA (CA); JIANGLEI MA, OTTAWA (CA)

Assignee: HUAWEI TECHNOLOGIES CO., LTD., SHENZHEN (CN)

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#### (57)**ABSTRACT**

Systems and methods are disclosed for providing H-ARQ transmissions in respect of a set of horizontal code blocks are combined in a code. Retransmissions contain vertical parity check blocks which are determined from verticals from the set of horizontal code blocks. Once all the vertical parity check blocks have been transmitted, a new set may be determined after performing interleaving upon either the content of the horizontal code blocks, in the case of nonsystematic horizontal code blocks, or over the content of encoder input bits in the place of systematic horizontal code blocks. The interleaving may be bitwise or bit subset-wise. The retransmissions do not contain any of the original bits. In the decoder, soft decisions are produced, and nothing needs to be discarded; decoding will typically improve with each retransmission.



Generate a plurality of code blocks, each code block comprising a respective set of encoder input bits and a respective set of parity bits computed on the respective set of encoder input bits

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## Transmit the plurality of code blocks

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In response to receiving a negative acknowledgement in respect of the plurality of code blocks, transmit a retransmission containing at least one first vertical check block of a first vertical parity block, the first vertical parity block comprising a plurality of first vertical check blocks

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