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Bala et al.

(54) **UPLINK CONTROL INFORMATION TRANSMISSION METHODS FOR CARRIER AGGREGATION**

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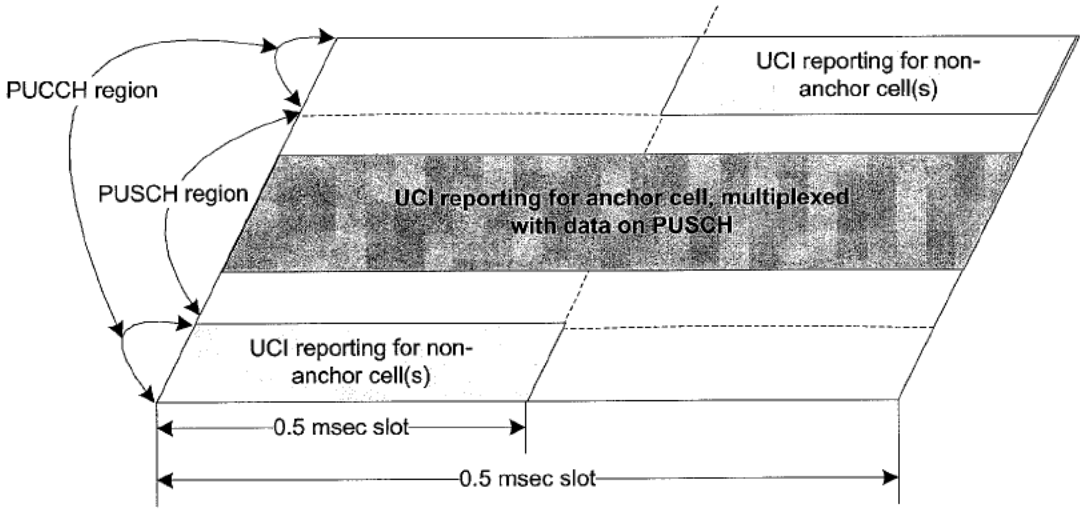
(57) **ABSTRACT**

A method and apparatus for transmitting uplink control information (UCI) for Long Term Evolution-Advanced (LTE-A) using carrier aggregation is disclosed. Methods for UCI transmission in the uplink control channel, uplink shared channel or uplink data channel are disclosed. The methods include transmitting channel quality indicators (CQI), precoding matrix indicators (PMI), rank indicators (RI), hybrid automatic repeat request (HARQ) acknowledgement/non-acknowledgement (ACK/NACK), channel status reports (CQI/PMI/RI), source routing (SR) and sounding reference signals (SRS). In addition, methods for providing flexible configuration in signaling UCI, efficient resource utilization, and support for high volume UCI overhead in LTE-A are disclosed.



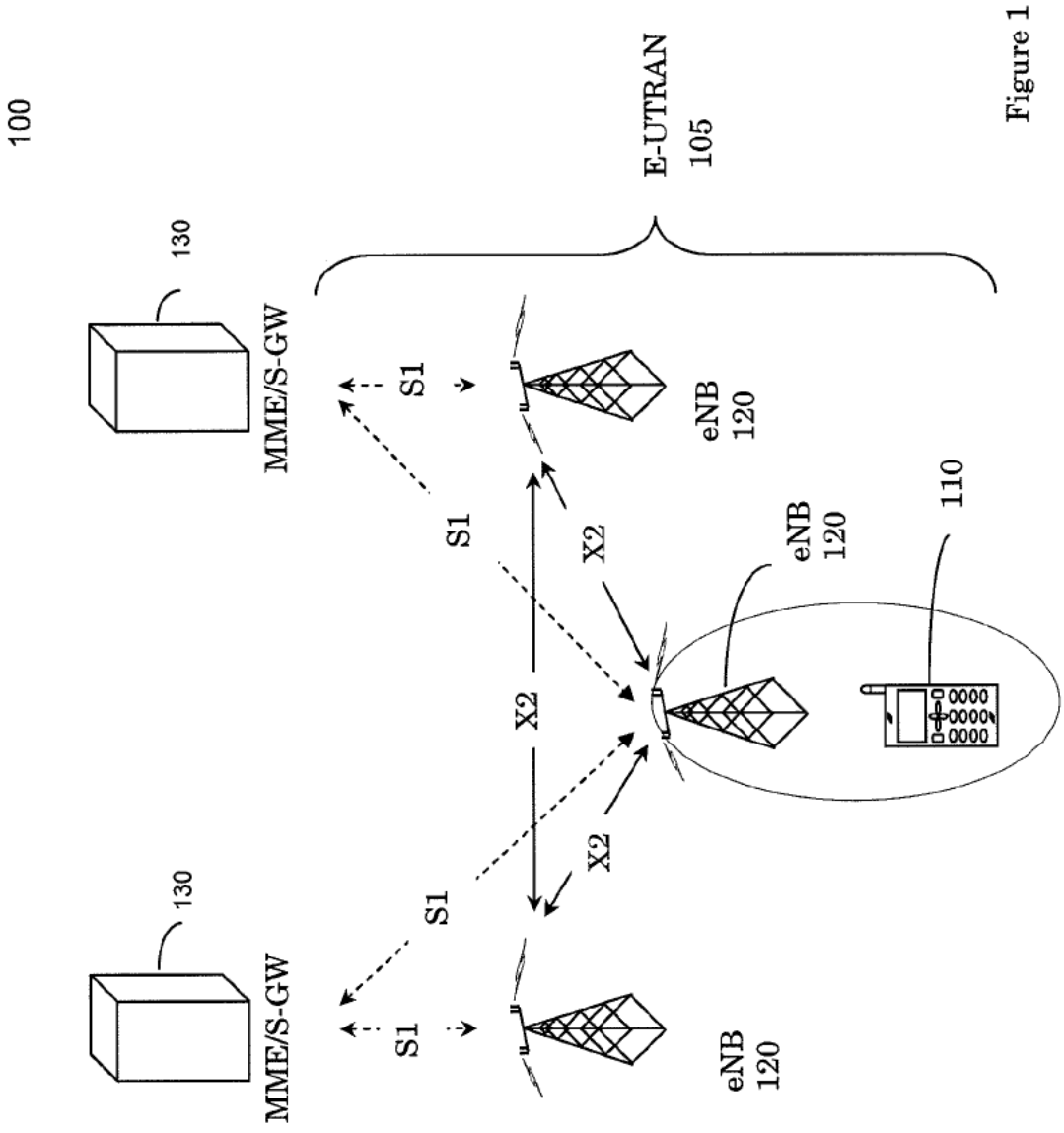
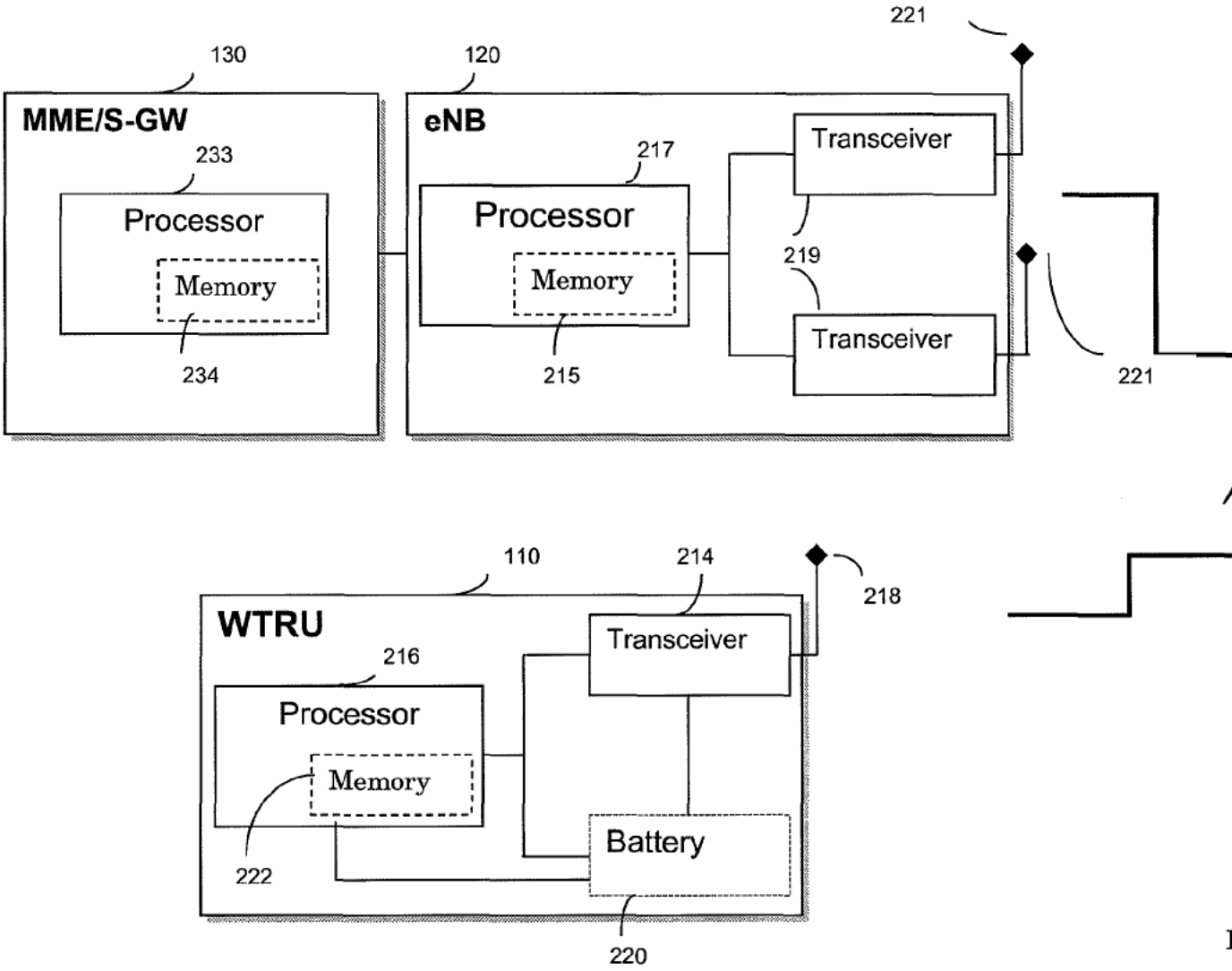


Figure 1



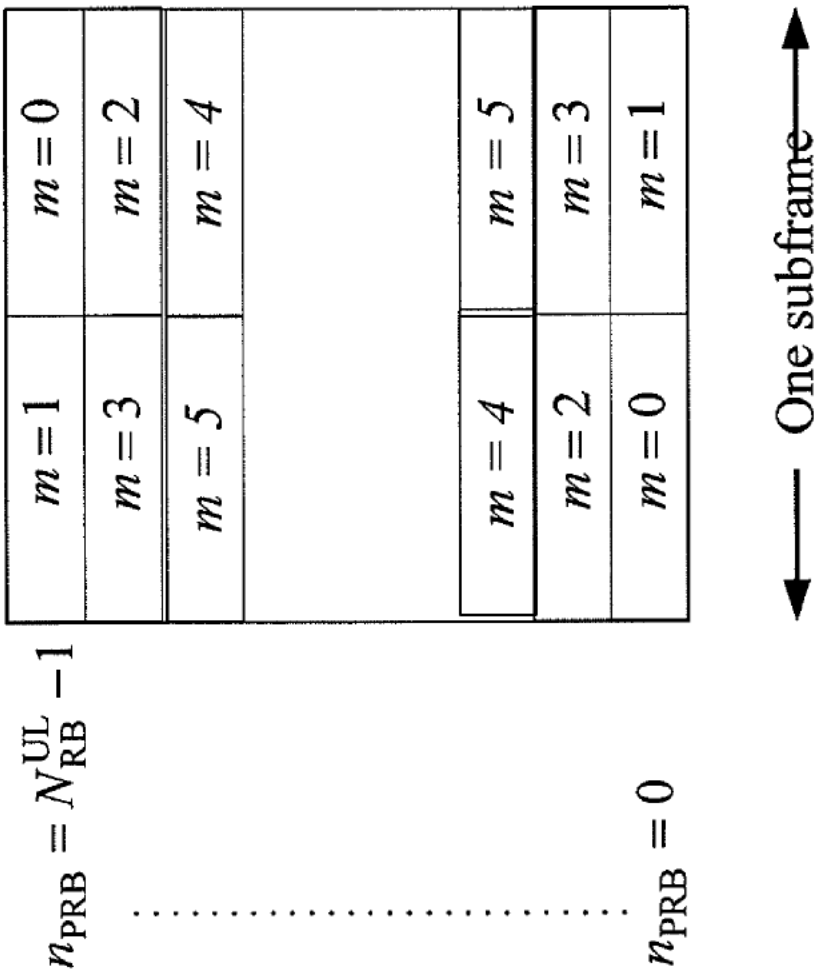


Figure 3

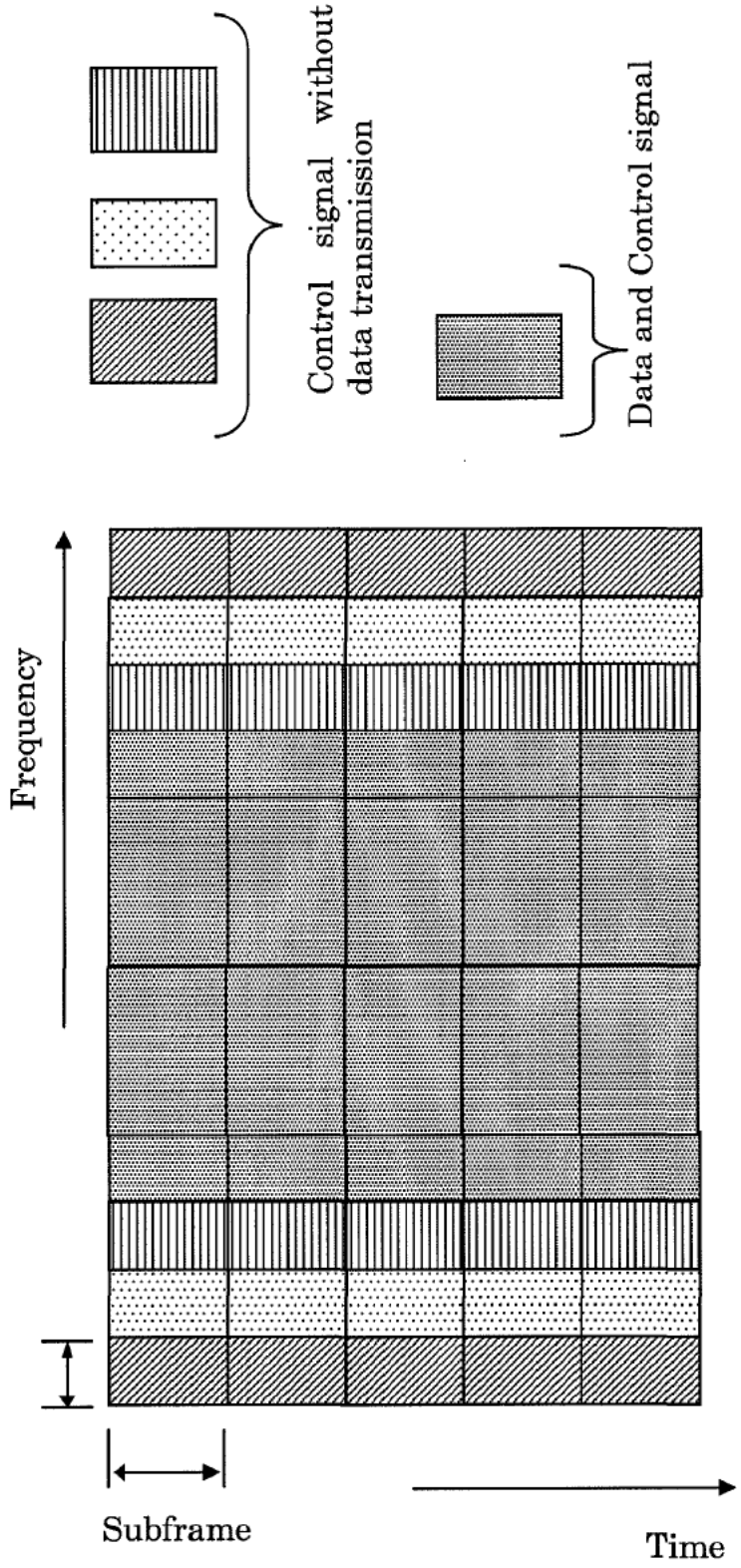


Fig. 4

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