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[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR SIMULTANEOUSLY RECEIVING ON TWO CARRIERS AND PERFORMING DISCONTINUOUS TRANSMISSION AND RECEPTION IN DUAL CELL HIGH SPEED DOWNLINK PACKET ACCESS

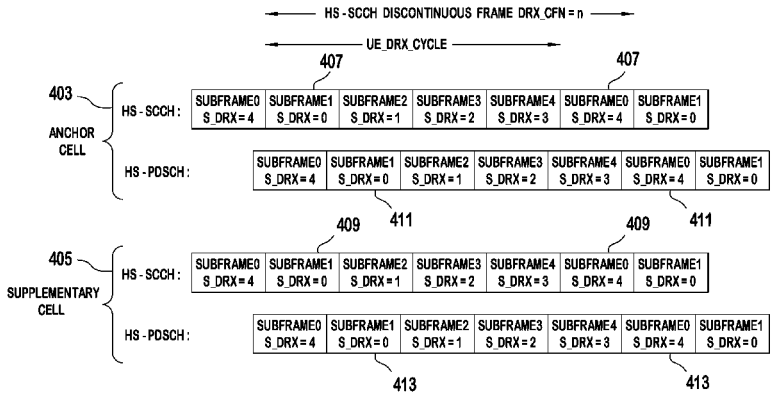


FIG. 4

(57) Abstract: A method and an apparatus for simultaneously receiving on two carriers and performing discontinuous transmission (DTX) and discontinuous reception (DRX) in dual cell high speed downlink packet access (DC-HSDPA) are disclosed. A wireless transmit/receive unit (WTRU) receives a message for activating DRX for at least one of an anchor carrier and a supplementary carrier and applies the same DRX pattern to the anchor carrier and the supplementary carrier upon reception of the message. The message may be received via a high speed shared control channel (HS-SCCH) order. The WTRU may activate or de-activate the supplementary carrier based on the physical layer signal. Upon activation of the supplementary carrier, the WTRU may apply the same DRX pattern on both the anchor carrier and the supplementary carrier. The WTRU may flush a hybrid automatic repeat request (HARQ) buffer associated with the supplementary carrier upon de-activation of the supplementary carrier.

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