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(54) **Title:** METHOD AND APPARATUS FOR SIGNALING FOR MULTI-ANTENNA TRANSMISSION WITH PRECODING

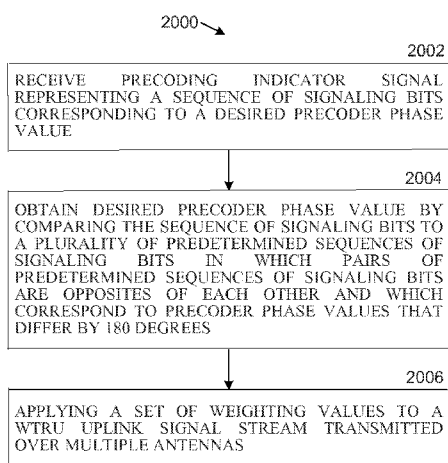


FIG. 20A

(57) **Abstract:** A method and apparatus for signaling for multi - antenna transmission with precoding are disclosed. Precoder phase information may be signaled using bit sequences that provide a degree of error tolerance in that precoder phases having large differences are signaled using bit sequences having large Hamming distances. A method comprising: receiving at a wireless transmit/receive unit (WTRU) a precoding indicator signal representing a sequence of signaling bits corresponding to a desired precoder phase value; obtaining the desired precoder phase value by comparing the sequence of signaling bits to a plurality of predetermined sequences of signaling bits in which pairs of predetermined sequences of signaling are opposites of each other and which correspond to precoder phase values that differ by 180 degrees; and, applying a set of weighting values to a WTRU uplink signal stream transmitted over multiple antennas where the set of weighting values have a phase differential equal to the desired precoder phase value.



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