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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: CALIBRATION AND BEAMFORMING IN A WIRELESS COMMUNICATION SYSTEM

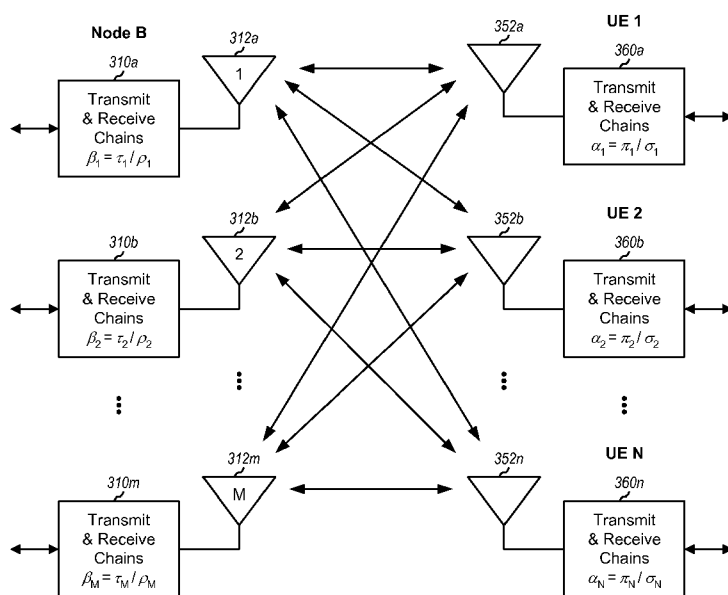


FIG. 3

(57) Abstract: Techniques for performing calibration and beamforming in a wireless communication system are described. In an aspect, a Node B may periodically perform calibration in each calibration interval with a set of UEs to obtain a calibration vector for the Node B. The Node B may apply the calibration vector to account for mismatches in the responses of the transmit and receive chains at the Node B. In another aspect, the Node B may perform beamforming to a UE by taking into account gain imbalance for multiple antennas at the UE. The Node B may determine a precoding matrix for beamforming by taking into account gain imbalance due to (i) different automatic gain control (AGC) gains for receive chains at the UE, (ii) different power amplifier (PA) gains for transmit chains at the UE, and/or (iii) different antenna gains for multiple antennas at the UE.

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