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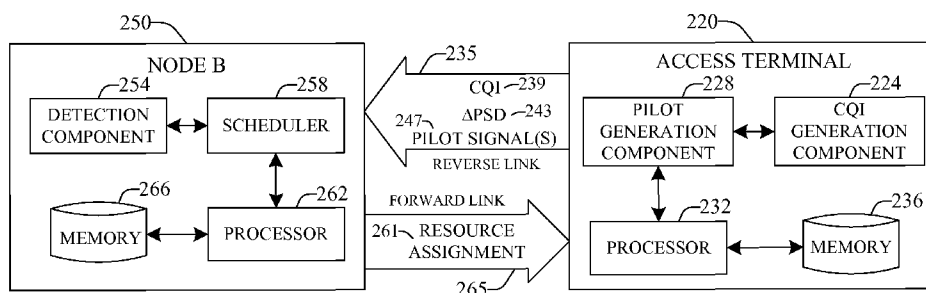
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(54) Title: UNIFIED DESIGN AND CENTRALIZED SCHEDULING FOR DYNAMIC SIMO, SU-MIMO AND MU-MIMO OPERATION FOR RL TRANSMISSIONS



(57) Abstract: Systems and methods facilitate pilot signal design, power control, data rate determination, and channel assignment in the reverse link of a wireless communication system for dynamic scheduling and joint operation in SIMO, SU-MIMO, and MU-MIMO. Pilot signal is based on periodic transmissions of multiple sounding reference sequences for channel estimation. Power control is based on a reference signal at a predetermined power spectral density (PSD) level, and on an offset PSD determined and signaled based on an antenna that transmits the reference signal, other cell interference, and power amplifier headroom. PSD levels for SIMO/MIMO data transmissions are determined based on channel estimates and the predetermined PSD and offset PSD. Such data PSD levels are employed to generate data rates, and to dynamically schedule data streams for communication. Communication resources are conveyed through a channel assignment with an overhead that depends on the maximum multiplexing order of the estimated channel.