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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))

[Continued on next page]

(54) Title: METHODS AND APPARATUS FOR IMPROVED UTILIZATION OF AIR LINK RESOURCES IN A WIRELESS COMMUNICATIONS SYSTEM

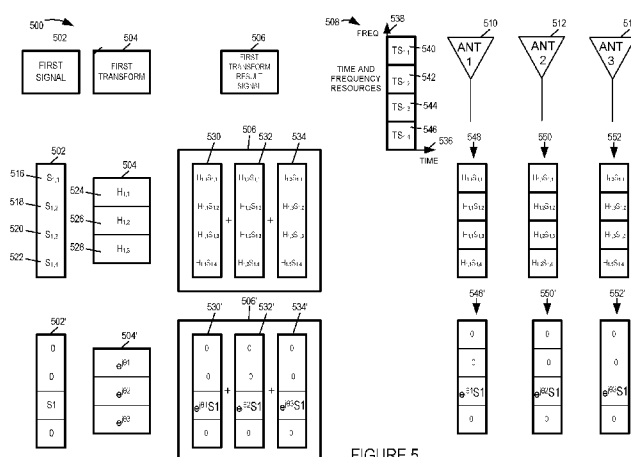


FIGURE 5

(57) Abstract: Methods and apparatus for improving the utilization of air link resources in a wireless communications system, e.g., an OFDM MIMO system, including a base station with multiple transmit antennas are described. Superposition signaling in the downlink is employed. The superimposed signal includes a first transform result signal and a second lower power signal. The first transform result signal is generated from a first signal, which uses position modulation, e.g., including null components and high power non-null components. Different components of the first transform result signal are directed to different transmit antennas. The first transform result signal communicates information to a first wireless terminal, e.g., a weak receiver. The non-null received elements of the first transform result signal are utilized by a second wireless terminal, e.g., a superior receiver, as pilots to determine a channel estimate. The second wireless terminal uses the determined channel estimate to demodulate received second signals.



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