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(54) **SYSTEM AND METHOD FOR TRANSMITTING AND RECEIVING A SIGNAL IN A MOBILE COMMUNICATION SYSTEM USING A MULTIPLE INPUT MULTIPLE OUTPUT ADAPTIVE ANTENNA ARRAY SCHEME**

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(57) **ABSTRACT**

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A method for transmitting and receiving weight information for creating transmission/reception beams in a mobile communication system using a multiple input multiple output adaptive antenna array scheme. The method includes a receiver receiving a predetermined signal, and differentially providing weights to a first scheme and a second scheme for minimizing an error between the received signal and a predetermined reference signal, thereby obtaining a minimum error value. The receiver generates a despread signal by despreading the received signal, produces a reception weight for creation of a reception beam by the receiver through calculation using the despread signal and the minimum error value, and produces a transmission weight for creation of a transmission beam by a counterpart transmitter through calculation using the reception weight and the minimum error value. The receiver generates predetermined feedback information including the transmission weight and a transmitter transmits the feedback information to a counterpart receiver.

(65) **Prior Publication Data**

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H04M 1/00 (2006.01)

(52) **U.S. Cl.** **455/562.1; 455/561; 455/65; 375/148; 375/340; 375/346**

(58) **Field of Classification Search** **455/101, 455/129, 103, 506, 114.1, 114.2, 562.1, 561, 455/65; 375/148, 340, 346**

See application file for complete search history.

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28 Claims, 11 Drawing Sheets

