## DETAILED ACTION

1. This office action is in response to the application as originally filed on 7/18/2012 and claims 1-12 are pending in this application.

### *Information Disclosure Statement*

2. The information disclosure statement (IDS) submitted on 7/16/2012 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner. Attached with this correspondence are the initialed copies of the IDS.

### *Response to Amendment*

3. Applicant's arguments with respect to claims 1-12 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection.

4. In response to Applicant's amendment and remarks, the following action has been taken:

a. The amendment to fig. 1 overcomes the objection to the drawing; and

b. The amendment to claim 5 overcomes the objection to the claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al., Yoshida hereinafter (US patent number 6,359,864, of a record) in view of Bruckert et al., Bruckert hereinafter (US patent number 5,812,542, Applicant cited reference of a record).

Yoshida teaches a user equipment (UE) (fig. 2) comprising:

circuitry configured to receive signal(s) transmitted by plurality of antennas (see plural transmitting antennas 107-1-to-107N in figure 1) of a base station; wherein the received signal having from each transmitting antenna a sequence of symbols unique to that antenna (see plurality of users and separate pilot sequences assigned to each antenna) and the received signal having a weighted sequence of symbols transmitted from all of the plurality of antennas (see weighting coefficients generated by elements 103-1-to-

103-K); wherein the circuitry is further configured to derive a preferred weight for a subsequent received signal based on the received signal and transmit an indication of the preferred weight to the base station (see receiver in figure 2, claimed UE, performing closed loop so that the transmitter will adjust the weighing for subsequent transmission), as in claim 1.

What Yoshid fails to teach is that the signal associated with a first antenna is combined with a corresponding signal associated with a second antenna using the preferred weight as in claim 1. Bruckert for the same endeavor as the instant application and that of the Yoshid teaches a spread spectrum communication system for communicating between the base station and mobile station (see figure 1) comprising a mobile station (100) for adaptively combining the received diversity signal (102) using the correct weighting signal.

Therefore it would have been obvious to one of an ordinary skill in the art to use the adaptive combining of the received signal using a corrected weighing coefficient for maximizing the signal ratio of the received diversity signal (see col. 4, lines 1-15, where the Bruckert overcomes the prior art) at the time the invention was made.

Further to claims 2-4, Yoshida teaches that:

The UE of claim 1, wherein the sequences of symbols from each antenna and the weighted sequence of symbols are derived from a same type of sequence (see user, pilot and antenna weighting spreaded using respective spreading sequences), as in claim 2.

The UE of claim 2, wherein the same type of sequence is a pseudo random sequence (see spreaded user and pilot sequences by the respective encoder 101- to-101-K and 104-1-to-104-N in figure 1), as in claim 3.

The UE of claim 2, wherein the sequences of symbols from each antenna are pilot symbols (see pilot signals 40-1-to-40-N), as in claim 4.

Yoshida teaches a base station (fig. 2) comprising:
a plurality of antennas that transmit signal(s), wherein each signal comprises a sequence of symbols unique to each one of the plurality of antennas (see plural transmitting antennas 107-1-to-107N in figure 1 and see also the plurality of users and separate pilot sequences assigned to each antenna) and the signal has a weighted sequence of symbols (see weighting generator 103-1-to-103-k),
wherein the antenna is configured to receive a signal indicating a preferred weight for a subsequent transmission signal based on the preferred weight, as in claim 5.

What Yoshid fails to teach is that the signal associated with a first antenna is combined with a corresponding signal associated with a second antenna using the preferred weight as in claim 5.

What Yoshid fails to teach is that the signal associated with a first antenna is combined with a corresponding signal associated with a second antenna using the preferred weight as in claim 1. Bruckert for the same endeavor as the instant application and that of the Yoshid teaches a spread spectrum communication system for communicating between the base station and mobile station (see figure 1) comprising a

mobile station (100) for adaptively combining the received diversity signal (102) using the correct weighting signal.

Therefore it would have been obvious to one of an ordinary skill in the art to use the adaptive combining of the received signal using a corrected weighing coefficient for maximizing the signal ratio of the received diversity signal (see col. 4, lines 1-15, where the Bruckert overcomes the prior art) at the time the invention was made.

Further to claims 6-8, Yoshida teaches:

The base station of claim 5, wherein the sequences of symbols and the weighted sequence of symbols are derived from a same type of sequence(see user, pilot and antenna weighting spreaded using respective spreading sequences), as in claim 6.

The base station of claim 6, wherein the same type of sequence is a pseudo random sequence (see spreaded user and pilot sequences by the respective encoder 101- to-101-K and 104-1-to-104-N in figure 1), as in claim 7.

The base station of claim 6, wherein the sequences of symbols are pilot symbols (see pilot signals 40-1-to-40-N), as in claim 8.

Yoshid teaches a method for deriving a preferred weight for a received signal from a Node B based on a received signal and transmitting an indication of the preferred weight to the base station comprising:
receiving signal(s) transmitted by plurality of antennas of a base station (see plural transmitting antennas 107-1-to-107N in figure 1) wherein the received signal has from each transmitting antenna a sequence of symbols unique to that antenna (see the

plurality of users and separate pilot sequences assigned to each antenna) and the received signal has a weighted sequence of symbols transmitted from all of the plurality of antennas (see the plurality of users and separate pilot sequences assigned to each antenna);

deriving a preferred weight for a subsequent received signal based on the received signal; and

transmitting an indication of the preferred weight to the base station (see receiver in figure 2, claimed UE, performing closed loop so that the transmitter will adjust the weighing for subsequent transmission), as in claim 9.

What Yoshid fails to teach is that the signal associated with a first antenna is combined with a corresponding signal associated with a second antenna using the preferred weight as in claim 9.

What Yoshid fails to teach is that the signal associated with a first antenna is combined with a corresponding signal associated with a second antenna using the preferred weight as in claim 1. Bruckert for the same endeavor as the instant application and that of the Yoshid teaches a spread spectrum communication system for communicating between the base station and mobile station (see figure 1) comprising a mobile station (100) for adaptively combining the received diversity signal (102) using the correct weighting signal.

Therefore it would have been obvious to one of an ordinary skill in the art to use the adaptive combining of the received signal using a corrected weighing coefficient for

maximizing the signal ratio of the received diversity signal (see col. 4, lines 1-15, where the Bruckert overcomes the prior art) at the time the invention was made.

Further to claims 10-12, Yashida teaches:

The method of claim 9, wherein the sequences of symbols and the weighted sequence of symbols are derived from a same type of sequence (see user, pilot and antenna weighting spreaded using respective spreading sequences), as in claim 10.

The method of claim l0, wherein the same type of sequence is a pseudo random sequence (see spreaded user and pilot sequences by the respective encoder 101- to-101-K and 104-1-to-104-N in figure 1), as in claim 11.

The method of claim l0, wherein the sequences of symbols are pilot symbols (see pilot signals 40-1-to-40-N), as in claim 12.

## *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patent number 5,796,779, 5,999,826, 6,069,912, 6,154,485 and 7,450,632 issued to Nussbaum et al., Whinnett, Sawahashi et al., Harrison and Lin Young-Seok respectively disclose a diversity receiver performing adaptive combining the received signal using corrected weighting coefficients.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TESFALDET BOCURE whose telephone number is (571)272-3015. The examiner can normally be reached on Mon-Fri (8:30a-6:30p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tesfaldet Bocure/
Primary Examiner, Art Unit 2611

/T. B./
Primary Examiner, Art Unit 2611