UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/901,616	10/11/2010	David K. Mesecher	I-2-0108US08	1473

24374 7590 10/10/2013

VOLPE AND KOENIG, P.C.
DEPT. ICC
UNITED PLAZA
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

EXAMINER	
BOCURE, TESFALDET	

ART UNIT	PAPER NUMBER
2634	

NOTIFICATION DATE	DELIVERY MODE
10/10/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eoffice@volpe-koenig.com

Office Action Summary	Application No. 12/901,616	Applicant(s) MESECHER, DAVID K.	
	Examiner TESFALDET BOCURE	Art Unit 2634	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7/29/2013*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *13-15* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *13-15* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some * c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/16/2012*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

1. The present application is being examined under the pre-AIA first to invent provisions.

2. This office action (Final Office Action) is in response to the amendment filed on 7/29/2013. The status of the claims is: claims 1-12 have been cancelled; and claims 13-15 are pending.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 7/16/2013 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 is the initialed copy of the IDS.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 15 is rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Yoshida et al., Yoshida hereinafter (US patent number 6,359,864, of a record).

Yoshida teaches a network device (see figure 1) comprising:

circuitry configured to receive weights from user equipment (UE) (see figure 2);

the circuitry is further configured to produce user data for transmission to the UE (see users' data 10-1---10-K);

the circuitry is further configured to combine the user data with a plurality of different pseudo noise sequences (see users data 10-1---10-K spread with a respective spreading code by encoder 101-1---101-K respectively);

the circuitry is further configured to weight the user data combined with the plurality of different pseudo noise sequences (see 103-1---103-k for weighting the spreaded signals);

the circuitry is further configured to produce pilot bits for each antenna of a plurality of antennas; wherein the pilot bits for each antenna are derived using different pseudo noise sequences (see pilot sequences for the respective antenna encoded by the encoder 104-1---104-N); and

the plurality of antennas (see antennas 107-1---107-N) configured to transmit the weighted user data combined with the plurality of different pseudo noise sequences (see users data 10-1---10-K spread with a respective spreading code by encoder 101-1---101-K respectively) and the produced pilot bits (see pilot sequences for the respective antenna encoded by the encoder 104-1---104-N) for the plurality of antennas to the UE (see user terminal in figure 2), as in claim 15.

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 13 and 14 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 Vook et al., Vook hereinafter (US patent number 5,982,327, of a record and previously cited by Applicant).

Yoshida teaches a user equipment (figure 2) comprising:

circuitry configured to receive a signal transmitted by a plurality of antennas;

wherein the signal includes user data that was combined with a plurality of different pseudo noise sequences (see encoders 101-.1---101-K for spreading user's data in figures 1,5,7 and 9); wherein the user data was weighted prior to transmission (see weighting circuit 103-1---103-K in figure 1); wherein the signal includes for each of the

plurality of antennas pilot bits; wherein the pilot bits for each antenna were derived from a plurality of different pseudo noise sequences (see pilot signals 40-1---40-N spreaded by a corresponding spreading sequences in the pilot encoders 104-1---104-N);

the circuitry is further configured to derive preferred weights for a subsequent received signal based on the received signal (see weighting signal detecting circuit 206 for feeding back a weighting coefficient to the transmitter of figure 1 for subsequent transmission of signal);

the circuitry is further configured to transmit an indication of the preferred weights to a base station (see element 300 for transmitting weighting signal detected by element 206); and

the circuitry is further configured to recover user data from each of the different pseudo noise sequences (see detectors 203-1---203N) as in claim 13.

Yoshida *selects* the plurality of the received and detected spread spectrum signal using the user signal selecting synthesizing circuit 204, however, fails to teach that the circuitry is further configured to *combine* the recovered user data from each of the different pseudo noise sequences, as in claim 13.

Vook for the same endeavor as the instant application and that of Yoshid teaches a pilot assisted weighted antenna diversity receiver for communicating a diversity signal between the base station and mobile station (see figure 2, 4,7,8,9 and 11), wherein the mobile station shown combines the weighted received signals from the plurality of

antenna together. It should be note that Vook discloses that the combining method and circuit is performed by both the base station and mobile station (to mention few, see for example abstract of the disclosure and col. 2, lines 65-67).

Therefore it would have been obvious to one of an ordinary skill in the art to use the adaptive combining of the received signal of Vook in the system of Yoshida for adequately tracking the change in the signal environment, in a fast fading environment (see col. 1, lines 27-29) and maximizing efficiency while simultaneously being able to track variation in the channel (see col. 2, lines 7-22) at the time the invention was made.

Further to claim 14, Yoshida teaches a method (see apparatus in figures 2,6,8 and 10 having inherent method for performing the each function of the circuitry shown in the figures) for use by user equipment (UE), the method comprising:

receiving (see receiver end in figures 2,6,8 and 10), by the UE, a signal transmitted by a plurality of antennas (see plurality of antennas in figures 1,5,7 and 9 for transmitting the spread, weighted and pilot added signals) signal; wherein the signal includes user data that was combined with a plurality of different pseudo noise sequences (see encoders 101-1---101-K for spreading user data 10-1---10-K) ; wherein the user data was weighted prior to transmission (see weighting 103-1---103-K); wherein the signal includes for each of the plurality of antennas pilot bits; wherein the pilot bits for each antenna were derived from a plurality of different pseudo noise sequences (see pilot signals 40-1---40-N spreaded by a corresponding spreading sequences in the pilot encoders);

deriving, by the UE, preferred weights for a subsequent received signal based on the received signal (see weighting signal detecting circuit 206 for feeding back a weighting coefficient to the transmitter of figure 1 for subsequent transmission of signal);

transmitting, by the UE, an indication of the preferred weights to a base station(see element 300 for transmitting weighting signal detected by element 206); and

recovering (see detectors 203-1---203N), by the UE, user data from each of the different pseudo noise sequences, as in claim 14.

Yoshida *selects* the plurality of the received and detected spread spectrum signal using the user signal selecting synthesizing circuit 204, however, fails to teach that the circuitry is further configured to *combine* the recovered user data from each of the different pseudo noise sequences, as in claim 13.

Vook for the same endeavor as the instant application and that of Yoshid teaches a pilot assisted weighted antenna diversity receiver for communicating a diversity signal between the base station and mobile station (see figure 2, 4,7,8,9 and 11), wherein the mobile station shown combines the weighted received signals from the plurality of antenna together. It should note that Vook discloses that the combining method and circuit is performed by both the base station and mobile station (see for example abstract of the disclosure and col. 2, lines 65-67).

Therefore it would have been obvious to one of an ordinary skill in the art to use the adaptive combining of the received signal of Vook in the system of Yoshida for

adequately tracking the change in the signal environment, in a fast fading environment (see col. 1, lines 27-29) and maximizing efficiency while simultaneously being able to track variation in the channel (see col. 2, lines 7-22) at the time the invention was made.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. US patent number 6,347,234 issued to Scherzer discloses a transmission system having a diversity transmitting and receiving circuitry for transmitting and receiving spreaded antenna weighted signals.

THIS ACTION IS MADE FINAL. 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 mailing date of this final action.

5. 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-Th, 8:30-6:00 and 8:30-5:00 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Payne C. David can be reached on (571)272-3024. 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 2634

/T. B./
Primary Examiner, Art Unit 2634