



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.
90/019,702	10/14/2024	RE47720	USTAP030D.RE	8522
92045	7590	03/31/2025		
The Caldwell Firm, LLC PO Box 59655 Dept. SVIPGP Dallas, TX 75229			EXAMINER HENEGHAN, MATTHEW E	
			ART UNIT	PAPER NUMBER
			3992	
			MAIL DATE	DELIVERY MODE
			03/31/2025	PAPER

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.



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

DO NOT USE IN PALM PRINTER

(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

Unified Patents, LLC
4445 Willard Ave.
Suite 600
Chevy Chase, MD 20815

***EX PARTE* REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/019,702.

PATENT UNDER REEXAMINATION RE47720.

ART UNIT 3992.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Office Action in Ex Parte Reexamination	Control No. 90/019,702	Patent Under Reexamination RE47720	
	Examiner MATTHEW E HENEGHAN	Art Unit 3992	AIA (First Inventor to File) Status No

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

- a. ☒ Responsive to the communication(s) filed on 14 October 2024.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

b. ☐ This action is made FINAL.

- c. ☒ A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c)**. If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|--|---|
| 1. ☐ Notice of References Cited by Examiner, PTO-892. | 3. ☐ Interview Summary, PTO-474. |
| 2. ☐ Information Disclosure Statement, PTO/SB/08. | 4. ☐ _____. |

Part II SUMMARY OF ACTION

- 1a. ☒ Claims 53-56,64-66,70,76,81-84 and 87-94 are subject to reexamination.
- 1b. ☐ Claims _____ are not subject to reexamination.
2. ☐ Claims _____ have been canceled in the present reexamination proceeding.
3. ☐ Claims _____ are patentable and/or confirmed.
4. ☒ Claims 53-56,64-66,70,76,81-84 and 87-94 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ The drawings, filed on _____ are acceptable.
7. ☐ The proposed drawing correction, filed on _____ has been (7a) ☐ approved (7b) ☐ disapproved.
8. ☐ Acknowledgment is made of the priority claim under 35 U.S.C. 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the certified copies have
1 ☐ been received.
2 ☐ not been received.
3 ☐ been filed in Application No. _____.
4 ☐ been filed in reexamination Control No. _____.
5 ☐ been received by the International Bureau in PCT application No. _____.

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

9. ☐ Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate 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.
10. ☐ Other: _____

cc: Requester (if third party requester)

U.S. Patent and Trademark Office
PTOL-466 (Rev. 08-13)

Office Action in Ex Parte Reexamination

Part of Paper No. 20250321

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis (i.e., changing from AIA to pre-AIA) for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

Reexamination

Ex Parte reexamination has been ordered in response to a request by a Third Party, Unified Patents, LLC, for reexamination of claims 53-56, 64-66, 70, 76, 81-84, and 87-94 of U.S. Patent No. RE47,720 to Burchfiel, which is a reissue of U.S. Patent No. 7,483,711. See Order Granting *Ex Parte* Reexamination, mailed by the Office on 5 December 2024.

In view of the surrender of original Patent No. 7,483,711 (hereinafter the '711 patent) and the granting of Reissue Patent No. RE47,720 (hereinafter the '720 reissue)

which issued on 5 November 2019, all subsequent proceedings in this reexamination will be based on the reissue patent claims.

The term of the '720 reissue is set to expire on or about 6 August 2026. In the event that this reexamination proceeding has not terminated as of that date, the Patent Owner shall be required remove any amendments to the claims made during this proceeding, other than for the cancellation of claims.

The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving the '711 patent and/or the '720 reissue throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

In order to ensure full consideration of any amendments, affidavits or declarations, or other documents as evidence of patentability, such documents must be submitted in response to this Office action. Submissions after the next Office action, which is intended to be a final action, will be governed by the requirements of 37 CFR 1.116, after final rejection and 37 CFR 41.33 after appeal, which will be strictly enforced.

Extensions of time under 37 CFR 1.136(a) will not be permitted in these proceedings because the provisions of 37 CFR 1.136 apply only to "an applicant" and not to parties in a reexamination proceeding. Additionally, 35 U.S.C. 305 requires that *ex parte* reexamination proceedings "will be conducted with special dispatch" (37 CFR 1.550(a)). Extensions of time in *ex parte* reexamination proceedings are provided for in 37 CFR 1.550(c).

References

The following references have been supplied by the Third Party Requester for proposed grounds of rejection:

U.S. Patent No. 6,628,673 to McFarland et al. (hereinafter McFarland)

U.S. Patent No. 6,745,012 to Ton et al. (hereinafter Ton)

U.S. Patent Application Publication No. 2004/0095907 to Agee et al. (hereinafter Agee)

Claim Construction

Claim 76 recites the term "legacy node." Based upon the specification of the '720 reissue, it is unclear what defines the difference between "legacy" node and other nodes. As such, this Office Action will treat legacy nodes as being essentially no different from other nodes.

Claim Rejections - 35 USC § 103

The following is a quotation of pre-AIA 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, 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 negated by the manner in which the invention was made.

Claims 53-56, 64-66, 70, 76, 81-84, and 87-94 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Agee in view of McFarland further in view of Ton.

Regarding claim 53, Agee discloses a method for managing interference in a radio communications network (see Abstract and paragraphs 4, 157, and 172), comprising the steps of:

Although Agee discloses a network having a need to avoid using a plurality of frequencies to transmit to the second node (see paragraphs 179 and 180, which show the selective use of diversity channels to optimize the overall network capacity; paragraphs 195, 244, 499, and 515 show the use of feedback for power optimization), Agee does not disclose an mechanism for receiving at a first node in the radio communications network an instruction transmitted from a second node in the radio communications network to avoid using a plurality of frequencies to transmit to the second node.

McFarland discloses an analogous wireless adaptive communication system (see Abstract) in which a node may adjust the frequency used by that node (see column

7, lines 37-40 and column 3, lines 7-14) based upon feedback from a base station (see column 4, lines 34-50), which leads to the node sending requests to the base station for channel reallocation, see column 5, lines 40-57). One skilled in the art would recognize that this implementation because this would allow for more efficiency by allowing nodes to manage frequencies by simply sending instructions (see James T. Grier Declaration at 50).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the invention of Agee by using McFarland's teachings to allow for instructions to be used to select channels to achieve Agee's use of certain channels for power optimization.

Although Agee discloses the use of band pass filters (see paragraph 274 and figure 5, occurs in both directions, see paragraph 280, per node adjustments are independent of one another, see paragraph 478), Agee does not disclose a mechanism for using this to remove power from the transmission signal specifically at each frequency in the plurality of frequencies to be avoided.

McFarland elaborates on this mechanism, in which filtering is performed as required on an individual basis, and channels not to be used are zeroed (see column 2, lines 57-67; column 4, lines 51-61; and column 8, lines 16-22). One skilled in the art would find it advantageous to use McFarland's teachings to choose where to implement filtering (see Grier at 56-57).

Therefore it would have further been obvious to one of ordinary skill in the art at the time the invention was made to modify Agee by performing channel adjustments on

an individual basis, as per McFarland, in order to more easily choose where to implement filtering.

Agee further discloses transmitting the filtered transmission signal to the second node (see figure 25 and paragraphs 274-280),

Although Agee teaches dynamic feedback from many nodes in a network, which provides for feedback from second or third nodes (see paragraph 172), i.e. receiving a compressed first or second feedback from the second or third node that characterizes receipt of a first signal sent from the first node to the second node, Agee in view of McFarland does not disclose that the feedback may be compressed. Likewise, Agee and McFarland do not teach decompressing the compressed first and second feedback resulting in a decompressed first and second feedback.

Ton discloses the general compressing of transmissions in any node in wireless data networks and that compressed data packets require less bandwidth to transmit (see column 3, lines 31-43), as well as corresponding decompression (see column 3, line 56 to column 4, line 3). One skilled in the art would also recognize that this would also reduce the amount of power needed to transmit (see Grier at 87).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the invention of Agee and McFarland by using data compression and decompression, as per Ton, to reduce the amount of bandwidth and power needed for transmitting.

Agee in view of Ton further discloses wherein the filtered transmission signal is a filtered first transmission signal that is transmitted to the second node using an orthogonal frequency-division multiplexing (OFDM) protocol via at least one antenna of

a plurality of antennas (Agee, figure 15 and paragraphs 210 and 487), using a first power that is based on the decompressed first feedback (use of locally-enabled network optimization to manage transmit power, see paragraphs 192, 478, and 499, as modified above by Ton), based on feedback (see paragraph 195), but does not state that an 802.11-based protocol is used with the OFDM deployment.

McFarland also discloses the OFDM protocol (see column 2, lines 36-67) with the 802.11 standard (see column 7, lines 10-21), because it is an industry standard.

Therefore it would also be obvious to one of ordinary skill in the art at the time the invention was made to implement the invention of Agee, McFarland, and Ton by using the 802.11 protocol, as per McFarland, as it is an industry standard.

Agee in view of McFarland in view of Ton further discloses transmitting, using the 802.11-based OFDM protocol, a filtered second transmission signal, simultaneously with the filtered first transmission signal, to the third node using a second power that is based on the decompressed second feedback (Agee discloses that nodes can simultaneously communicate with many nodes, see paragraph 77; therefore the second transmission signal may be transmitted to the third node simultaneously with the first transmission signal being transmitted to the second node, also see paragraphs 210 and 478).

Regarding claim 54, a first instruction is included (e.g. Agee teaches the limiting of a number of channel a node can use, see paragraph 179, while McFarland teaches a command from a receiver for channel selection, see column 4, lines 34-50), a second instruction transmitted from the third node to avoid using a different plurality of frequencies to transmit to the third node (Agee teaches that the diversity channel

distribution need not be equal, see paragraphs 179-180, suggesting different instructions regarding the plurality of frequencies for different links to nodes. Also note that with multiple base stations, different interference characteristics may require different configurations, see paragraph 214 and figure 19; signals are self-moderating, implying different configurations, see paragraphs 244 and 249-250; it is therefore obvious that different channels would require different instructions per McFarland), filtering a second transmission signal to remove power from the second transmission signal at each frequency in the different plurality of frequencies to be avoided, resulting in the filtered second transmission signal (Agee's use of bandpass filters with a number of modes equal to the number of antennae, see paragraph 274, leads to filtering at all appropriate frequencies in each of the signals).

Regarding claims 55 and 56, since nodes are independently adjusting transmit power, see paragraphs 478 and 499, the first and second power could be the same or different, depending upon the situation.

Regarding claim 64, Agee discloses that the nodes are MIMO-capable, so they may simultaneously communicate to multiple nodes via the same plurality of antennas, which may be shared (see paragraphs 177 and 487).

Regarding claim 65, Agee discloses that the nodes are MIMO-capable, so they may simultaneously communicate to multiple nodes via different pluralities of antennas (see paragraphs 173, 177, 210, and 487).

Regarding claim 66, Agee discloses that the nodes are MIMO-capable, so they may simultaneously communicate to multiple nodes via the same antenna, which may be shared (see paragraphs 177 and 487).

Regarding claim 70, Agee discloses that each node incorporates a MIMO transceiver having an antenna array (see paragraphs 272-273), allowing for 1-to-M RF feeds from the transceiver; therefore, multiple signals may be sent via the same transceiver.

Regarding claim 76, Agee discloses feedback being sent to all nodes as appropriate in response to received signals (see paragraph 172) and there may be at least a fourth node for such interactions (see figure 18); therefore, Agee in view of McFarland in view of Ton renders obvious signals with feedback, using compression and decompression, using 802.11 OFDM protocols.

Regarding claims 81 and 82, Agee discloses received operations that trigger feedback as operations for designating which channels to use (see paragraphs 179-180), which corresponds to the first command, or for power optimization (see paragraphs 195,244,499, and 515), which are implemented as instructions by teachings of McFarland, as stated above. Although the timing of the two operations is not specified by either Agee or McFarland, they are independent of one another, and one skilled in the art would recognize that they could appear separately, either prior to or after one another.

Regarding claims 83 and 84, Agee discloses that the nodes are MIMO-capable, so they may simultaneously communicate to multiple nodes via the same or different pluralities of antennas, which may be shared (see paragraphs 173, 177, 210, and 487). Given that Agee shows deployments in which one node is simultaneously in communication with at least three other nodes (see figure 18), it would be obvious for there to be at least three simultaneous transmission signals to at least three different devices using the same or different multiple antennas.

Regarding claims 87 and 88, the instruction described by McFarland specifies which frequency bands may be used (see column 6, lines 10-15). Agee's implementation would be confined to specified bands specified in the first instruction (see, for example, paragraphs 119 and 195), so it would be obvious for this to result in the transmission on a first frequency in that frequency band. In turn, it would also be obvious to have frequencies to a third node based on another instruction from that node (see figure 19, for example), due to Agee's diversity architecture (see paragraphs 119 and 172), with a likewise result of a second transmission in the second frequency band.

Regarding claims 89 and 90, Agee discloses that different transmissions on the network may use the same frequency or frequency band (see paragraph 258).

Regarding claims 91-93, the instruction described by McFarland specifies which frequency bands may be used (see column 6, lines 10-15). Agee's implementation would be confined to specified bands specified in the first instruction (see, for example, paragraphs 119 and 195), so it would be obvious for this to result in the transmission on a first frequency in that frequency band. In turn, it would also be obvious to have frequencies to a third node based on another instruction from that node (see figure 19, for example), due to Agee's diversity architecture (see paragraphs 119 and 172), with a likewise result of a second transmission in the second frequency band.

Regarding claim 94, several of the alternative limitations are already stated in the grounds of rejection for base claim 53; for example, it has been established that it would be obvious for the radio communications network to include an 802.11 network. It is noted that this claim is recited in a manner where only one limitation on the list is necessary to show obviousness over the prior art.

Conclusion

All correspondence relating to this *ex parte* reexamination proceeding should be directed:

Electronically: Registered users may submit via Patent Center at
<https://patentcenter.uspto.gov/>.

By Mail to: Mail Stop *Ex Parte* Reexam
 Central Reexamination Unit
 Commissioner for Patents
 United States Patent & Trademark Office
 P.O. Box 1450
 Alexandria, VA 22313-1450

By FAX to: (571) 273-9900
 Central Reexamination Unit

By hand: Customer Service Window
 Knox Building
 501 Dulany Street
 Alexandria, VA 22314

For Patent Center transmissions, 37 CFR 1.8(a)(1)(i)(C) and (ii) states that correspondence (except for a request for reexamination and a corrected or replacement request for reexamination) will be considered timely filed if (a) it is transmitted via the USPTO patent electronic filing system in accordance with 37 CFR 1.6(a)(4), and (b) includes a certificate of transmission for each piece of correspondence stating the date of transmission, which is prior to the expiration of the set period of time in the Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW E HENEGHAN whose telephone number is (571)272-3834. The examiner can normally be reached M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Fuelling can be reached on (571)270-1367. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/MATTHEW E HENEGHAN/
Primary Examiner, Art Unit 3992

Conferees:
/Ovidio Escalante/
Primary Examiner, Art Unit 3992
/MICHAEL FUELLING/
Supervisory Patent Examiner, Art Unit 3992