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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/176,298	07/05/2011	Paul Howard	IPW2-USCN191712	4342

3624	7590	11/06/2013
VOLPE AND KOENIG, P.C. UNITED PLAZA 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103		

EXAMINER	
ABELSON, RONALD B	

ART UNIT	PAPER NUMBER
2476	

NOTIFICATION DATE	DELIVERY MODE
11/06/2013	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):

coffice@volpe-koenig.com

Office Action Summary	Application No. 13/176,298	Applicant(s) HOWARD, PAUL	
	Examiner RONALD B. ABELSON	Art Unit 2476	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 10/24/13.
☐ 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) 45,47-52,54-59,61-66,68-73,75-80 and 82-96 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) 45,47-52,54-59,61-66,68-73,75-80 and 82-96 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 1/19/13 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 _____.

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

4) ☐ Other: _____.

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

Claim Rejections - 35 USC § 103

2. 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.

3. Claims 45, 47, 49, 50, 52, 54, 56, 57, 59, 61, 63, 64, 66, 68, 70, 71, 73, 75, 77, 78, 80, 82, 84, 85, and 89-96 are rejected under 35 U.S.C. 103(a) as being unpatentable Ishii US 20070265017 in view of Matthews US 20020077151 and Anderson US 20080144600.

Regarding claims 45, 52, 59, 66, 73, and 80, Ishii teaches a user equipment (UE) comprising:

a processor configured to receive resource allocation information associated with an uplink physical control channel (uplink control channel, [0207]), wherein the uplink physical control channel and a physical uplink shared channel / PUSCH have different resources;

the processor is further configured to send data over the physical uplink shared channel in assigned time intervals (uplink control channel can be one of two types, a channel to be time-multiplexed with physical uplink shared channel PUSCH and a channel to be frequency-multiplexed with it, [0207]).

Although Ishii teaches time multiplexing the uplink physical control channel and a physical uplink shared channel / PUSCH, the reference is silent on the processor is further configured, in a time interval that it is not sending information over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information. The Examiner interprets this limitation to be dynamically allocating the time slots for transmitting the uplink physical control channel and a

physical uplink shared channel based on received resource allocation information transmitted from the network.

Matthews teaches dynamically allocating control channels on uplink time slots (control channels dynamically allocated on uplink and downlink frequencies, time slots and code channels, [0074]) based on received resource allocation information transmitted from the network (primary base station subsystem provides principle interface between base station controller and radio network, commands from base station controller interface used to configure primary base station, frequency, time slot and code channel allocation are based on commands received through the base station controller interface, [0084]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Ishii by the processor is further configured, in a time interval that it is not sending information over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information, as suggested by Matthews. This modification would benefit the system by efficiently using bandwidth.

Although Ishii teaches PLCCH, the reference is silent on the processor is further configured to receive feedback information from a downlink control channel.

Anderson teaches a processor in a UE configured to receive feedback information from a downlink control channel (PLCCH implemented for communication of TPC and SS data, transmission comprising TPC and SS data bits for plurality of UEs, [0131]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Malladi by the processor is further configured to receive feedback information from a downlink control channel, as suggested by Anderson. This modification would benefit the system by providing a proven, reliable method for the UEs to receive feedback data.

Regarding claims 47, 54, 61, 68, 75, 82, the processor is further configured to receive data on a physical downlink shared channel (Ishii: PDSCH, [0207]).

Regarding claims 49, 56, 63, 70, 77, 84, the feedback information includes power control information (Anderson: PLCCH

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implemented for communication of TPC and SS data, transmission comprising TPC and SS data bits for plurality of UEs, [0131]).

Regarding claims 50, 57, 64, 71, 78, 85, the downlink control channel includes power control information for a plurality of UEs using different bits (Anderson: PLCCH implement by including one TPC data bit and two SS data bits for each UE, [0132], [0136]).

Regarding claims 89-94, the uplink physical control channel, the respective uplink physical control channels, or the physical uplink shared channel is any one of a time division multiple access (TDMA), code division multiple access (CDMA), time division duplex (TDD), frequency division duplex (FDD), time division-code division multiple access (TD-CDMA), or universal mobile telecommunication system (UMTS) physical channel (Ishii: (uplink control channel can be one of two types, a channel to be time-multiplexed with physical uplink shared channel PUSCH and a channel to be frequency-multiplexed with it, [0207])).

Regarding claims 95, 96, the uplink physical control channel, the respective uplink physical control channels, or the physical uplink shared channel is any one of a time division multiple access (TDMA), code division multiple access (CDMA), time division duplex (TDD), frequency division duplex (FDD), time division-code division multiple access (TD-CDMA), or universal mobile telecommunication system (UMTS) physical channel (Ishii: uplink control channel can be one of two types, a channel to be time-multiplexed with physical uplink shared channel PUSCH and a channel to be frequency-multiplexed with it, [0207])).

4. Claims 48, 55, 62, 69, 76, and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ishii, Matthews, and Anderson as applied to claim 47, 54, 61, 68, 75, 82 above, and further in view of Beckmann US 20030022683.

Anderson teaches the downlink control channel is time multiplexed (TDD, PLCCH, [0149]).

The combination is silent on teaches the physical downlink shared channel is time multiplexed.

Beckmann teaches the physical downlink shared channel is time multiplexed (TDD, PDSCH, [0030]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by the downlink control channel and the physical downlink shared channel are time multiplexed, as shown by Anderson and Beckmann. This modification would benefit the system by providing efficient use of resources.

5. Claim 51, 58, 65, 72, 79, 86, rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ishii, Matthews, and Anderson as applied to claim 45, 52, 59, 66, 73, 80 above, and further in view of Kim US 20020150058.

The combination is silent on in the time interval that the uplink physical control channel is sent, a plurality of UEs transmit on uplink physical control channels in that time interval.

Kim teaches a channelization code serves to identify uplink channel of each UE, when plurality of UEs simultaneously transmit data in one time slot in NB-TDD CDMA mobile communication system ([0087]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by in the time interval that the uplink physical control channel is sent, a plurality of UEs transmit on uplink physical control channels in that time interval, as suggested by Kim. This modification would benefit the system by allowing a plurality of UEs to transmit simultaneously.

6. Claims 87 and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable Ishii US 20070265017 in view of Matthews US 20020077151, Anderson US 20080144600, and Kim US 20020150058.

Regarding claims 87 and 88, Ishii teaches a user equipment (UE) comprising:

a processor configured to receive resource allocation information associated with an uplink physical control channel (uplink control channel, [0207]), wherein the uplink physical control channel and a physical uplink shared channel / PUSCH have different resources;

the processor is further configured to send data over the physical uplink shared channel in assigned time intervals (uplink control channel can be one of two types, a channel to be time-multiplexed with physical uplink shared channel PUSCH and a channel to be frequency-multiplexed with it, [0207]).

Although Ishii teaches time multiplexing the uplink physical control channel and a physical uplink shared channel / PUSCH, the reference is silent on the processor is further configured, in a time interval that it is not sending information over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information. The Examiner interprets this limitation to be dynamically allocating the time

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slots for transmitting the uplink physical control channel and a physical uplink shared channel.

Matthews teaches dynamically allocating control channels on uplink time slots (control channels dynamically allocated on uplink and downlink frequencies, time slots and code channels, [0074])).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Ishii by the processor is further configured, in a time interval that it is not sending information over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information, as suggested by Matthews. This modification would benefit the system by efficiently using bandwidth.

Although Ishii teaches PLCCH, the reference is silent on the processor is further configured to receive feedback information from a downlink control channel.

Anderson teaches a processor in a UE configured to receive feedback information from a downlink control channel (PLCCH

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implemented for communication of TPC and SS data, transmission comprising TPC and SS data bits for plurality of UEs, [0131]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Malladi by the processor is further configured to receive feedback information from a downlink control channel, as suggested by Anderson. This modification would benefit the system by providing a proven, reliable method for the UEs to receive feedback data.

The combination is silent on in the time interval that the uplink physical control channel is sent, a plurality of UEs transmit on uplink physical control channels in that time interval.

Kim teaches a channelization code serves to identify uplink channel of each UE, when plurality of UEs simultaneously transmit data in one time slot in NB-TDD CDMA mobile communication system ([0087]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by in the time interval that the uplink physical control channel is sent, a plurality of UEs transmit on uplink physical control

channels in that time interval, as suggested by Kim. This modification would benefit the system by allowing a plurality of UEs to transmit simultaneously.

Response to Arguments

7. Applicant's arguments filed 10/24/13 have been fully considered but they are not persuasive. Applicant argues Matthews or paragraph [0074] do not specifically teach the channel configurations, channel resource allocation, and timing relationships where "in a time interval that it is not sending information over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information..." as found in claim 45 (pg. 1st paragraph). However, Ishii teaches time multiplexing the physical uplink shared channel and the uplink physical control channel. Furthermore, Matthews teaches dynamically allocating control channels on uplink time slots based on received resource allocation information transmitted from the network. In the same paragraph the applicant states, "Matthews does not even teach or suggest the interworking between an uplink shared channel and an uplink physical control channel as in claim 45". However, as shown above, Ishii teaches

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interworking between an uplink shared channel and an uplink physical control channel.

Conclusion

8. **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.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONALD B. ABELSON whose telephone number is (571)272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. 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.

RONALD B ABELSON
Primary Examiner
Art Unit 2476

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/RONALD B ABELSON/

Primary Examiner, Art Unit 2476



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3624	7590	07/24/2013
VOLPE AND KOENIG, P.C. UNITED PLAZA 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103		

EXAMINER	
ABELSON, RONALD B	

ART UNIT	PAPER NUMBER
2476	

NOTIFICATION DATE	DELIVERY MODE
07/24/2013	ELECTRONIC

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coffice@volpe-koenig.com

Office Action Summary	Application No. 13/176,298	Applicant(s) HOWARD, PAUL	
	Examiner RONALD B. ABELSON	Art Unit 2476	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

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Status

- 1) ☒ Responsive to communication(s) filed on 13 June 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) 45,47-52,54-59,61-66,68-73,75-80 and 82-96 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) 45,47-52,54-59,61-66,68-73,75-80 and 82-96 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 1/19/13 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) | 3) ☐ Interview Summary (PTO-413) |
| 2) ☐ Information Disclosure Statement(s) (PTO/SB/08) | Paper No(s)/Mail Date. ____. |
| Paper No(s)/Mail Date ____. | 4) ☐ Other: ____. |

Claim Rejections - 35 USC § 103

1. 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.

2. Claims 45, 47, 49, 50, 52, 54, 56, 57, 59, 61, 63, 64, 66, 68, 70, 71, 73, 75, 77, 78, 80, 82, 84, 85, and 89-96 are rejected under 35 U.S.C. 103(a) as being unpatentable Ishii US 20070265017 in view of Matthews US 20020077151 and Anderson US 20080144600.

Regarding claims 45, 52, 59, 66, 73, and 80, Ishii teaches a user equipment (UE) comprising:

a processor configured to receive resource allocation information associated with an uplink physical control channel (uplink control channel, [0207]), wherein the uplink physical

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control channel and a physical uplink shared channel / PUSCH have different resources;

the processor is further configured to send data over the physical uplink shared channel in assigned time intervals (uplink control channel can be one of two types, a channel to be time-multiplexed with physical uplink shared channel PUSCH and a channel to be frequency-multiplexed with it, [0207]).

Although Ishii teaches time multiplexing the uplink physical control channel and a physical uplink shared channel / PUSCH, the reference is silent on the processor is further configured, in a time interval that it is not sending information over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information. The Examiner interprets this limitation to be dynamically allocating the time slots for transmitting the uplink physical control channel and a physical uplink shared channel.

Matthews teaches dynamically allocating control channels on uplink time slots (control channels dynamically allocated on

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Anderson teaches a processor in a UE configured to receive feedback information from a downlink control channel (PLCCH implemented for communication of TPC and SS data, transmission comprising TPC and SS data bits for plurality of UEs, [0131])).

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from a downlink control channel, as suggested by Anderson. This modification would benefit the system by providing a proven, reliable method for the UEs to receive feedback data.

Regarding claims 47, 54, 61, 68, 75, 82, the processor is further configured to receive data on a physical downlink shared channel (Ishii: PDSCH, [0207]).

Regarding claims 49, 56, 63, 70, 77, 84, the feedback information includes power control information (Anderson: PLCCH implemented for communication of TPC and SS data, transmission comprising TPC and SS data bits for plurality of UEs, [0131]).

Regarding claims 50, 57, 64, 71, 78, 85, the downlink control channel includes power control information for a plurality of UEs using different bits (Anderson: PLCCH implement by including one TPC data bit and two SS data bits for each UE, [0132], [0136]).

Regarding claims 89-94, the uplink physical control channel, the respective uplink physical control channels, or the physical uplink shared channel is any one of a time division multiple access (TDMA), code division multiple access (CDMA), time division duplex (TDD), frequency division duplex (FDD), time division-code division multiple access (TD-CDMA), or universal mobile telecommunication system (UMTS) physical channel (Ishii: (uplink control channel can be one of two types, a channel to be time-multiplexed with physical uplink shared channel PUSCH and a channel to be frequency-multiplexed with it, [0207])).

Regarding claims 95, 96, the uplink physical control channel, the respective uplink physical control channels, or the physical uplink shared channel is any one of a time division multiple access (TDMA), code division multiple access (CDMA), time division duplex (TDD), frequency division duplex (FDD), time division-code division multiple access (TD-CDMA), or universal mobile telecommunication system (UMTS) physical channel (Ishii: uplink control channel can be one of two types, a channel to be

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3. Claims 48, 55, 62, 69, 76, and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Ishii, Matthews, and Anderson as applied to claim 47, 54, 61, 68, 75, 82 above, and further in view of Beckmann US 20030022683.

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the processor is further configured to send data over the physical uplink shared channel in assigned time intervals

(uplink control channel can be one of two types, a channel to be time-multiplexed with physical uplink shared channel PUSCH and a channel to be frequency-multiplexed with it, [0207])).

Although Ishii teaches time multiplexing the uplink physical control channel and a physical uplink shared channel / PUSCH, the reference is silent on the processor is further configured, in a time interval that it is not sending information over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information. The Examiner interprets this limitation to be dynamically allocating the time slots for transmitting the uplink physical control channel and a physical uplink shared channel.

Matthews teaches dynamically allocating control channels on uplink time slots (control channels dynamically allocated on uplink and downlink frequencies, time slots and code channels, [0074])).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Ishii by the processor is further configured, in a time interval that it is not sending

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information over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information, as suggested by Matthews. This modification would benefit the system by efficiently using bandwidth.

Although Ishii teaches PLCCH, the reference is silent on the processor is further configured to receive feedback information from a downlink control channel.

Anderson teaches a processor in a UE configured to receive feedback information from a downlink control channel (PLCCH implemented for communication of TPC and SS data, transmission comprising TPC and SS data bits for plurality of UEs, [0131]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Malladi by the processor is further configured to receive feedback information from a downlink control channel, as suggested by Anderson. This modification would benefit the system by providing a proven, reliable method for the UEs to receive feedback data.

The combination is silent on in the time interval that the uplink physical control channel is sent, a plurality of UEs transmit on uplink physical control channels in that time interval.

Kim teaches a channelization code serves to identify uplink channel of each UE, when plurality of UEs simultaneously transmit data in one time slot in NB-TDD CDMA mobile communication system ([0087]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by in the time interval that the uplink physical control channel is sent, a plurality of UEs transmit on uplink physical control channels in that time interval, as suggested by Kim. This modification would benefit the system by allowing a plurality of UEs to transmit simultaneously.

Response to Arguments

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

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONALD B. ABELSON whose telephone number is (571)272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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RONALD B ABELSON
Primary Examiner
Art Unit 2476

/RONALD B ABELSON/

Primary Examiner, Art Unit 2476



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/176,298	07/05/2011	Paul Howard	IPW2-USCN191712	4342

3624	7590	04/10/2013
VOLPE AND KOENIG, P.C. UNITED PLAZA 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103		

EXAMINER	
ABELSON, RONALD B	

ART UNIT	PAPER NUMBER
2476	

NOTIFICATION DATE	DELIVERY MODE
04/10/2013	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):

coffice@volpe-koenig.com

Office Action Summary	Application No.		Applicant(s)	
	13/176,298		HOWARD, PAUL	
	Examiner		Art Unit	
	RONALD B. ABELSON		2476	

-- 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 2/7/13, 1/19/13, 7/20/12, 4/16/12.

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) 45-86 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) 45,51,52,73 and 80 is/are rejected.

8) ☒ Claim(s) 46-50,53-72,74-79 and 81-86 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 19 January 2013 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).

a) ☐ All b) ☐ Some * c) ☐ None of:

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 2/7/13, 7/20/12 and 4/16/12

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

4) ☐ Other: ____

Claim Rejections - 35 USC § 103

1. 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 negated by the manner in which the invention was made.

2. Claims 45, 52, 59, 66, 73, and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malladi US 20080090528. For support see US 60819268 (fig. 4A top drawing).

Regarding claims 45, 52, 59, 66, 73, and 80, Malladi teaches a user equipment (UE) comprising:

a processor configured to receive resource allocation information associated with an uplink physical control channel / PUCCH, wherein the uplink physical control channel and a physical uplink shared channel / PUSCH have different resources;

the processor is further configured to send data over the physical uplink shared channel in assigned frequency intervals; and

the processor is further configured, in a frequency interval that it is not sending data over the physical uplink shared channel, to send a signal over the uplink physical control channel based on the received resource allocation information (fig. 3, UE assigned control segment of M contiguous subcarriers, M may be fixed or configurable, control segment referred to as physical uplink control channel 'PUCCH', UE may also be assigned Q contiguous subcarriers, Q may be fixed or configurable, data segment referred to as physical uplink shared channel 'PUSCH', [0040, 0041]).

Although Malladi teaches assigning the PUCCH and PUSCH in different frequency intervals, it would have been obvious to one of ordinary skill in the art to assign the two channels in different time intervals. Note, Speight US 20030069020 teaches assigning PUSCH timeslots.

3. Claim 51 rejected under 35 U.S.C. 103(a) as being unpatentable over Malladi as applied to claim 45 above, and further in view of Kim US 20020150058.

Malladi is silent on in the time interval that the uplink physical control channel is sent, a plurality of UEs transmit on uplink physical control channels in that time interval.

Kim teaches a channelization code serves to identify uplink channel of each UE, when plurality of UEs simultaneously transmit data in one time slot in NB-TDD CDMA mobile communication system ([0087]).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Malladi by in the time interval that the uplink physical control channel is sent, a plurality of UEs transmit on uplink physical control channels in that time interval, as suggested by Kim. This modification would benefit the system by allowing a plurality of UEs to transmit simultaneously.

Allowable Subject Matter

4. Claims 46-50, 53-68, 60-65, 67-72, 74-79, and 81-86 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONALD B. ABELSON whose telephone number is (571)272-3165. The examiner can normally be reached on M-F.

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