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| 13/539,584                                                                                                    | 07/02/2012  | ALEX NERST           | 2151-US / 47856.103     | 5417                   |
| 106874 7590 01/27/2015<br>Haynes and Boone, LLP (47856)<br>2323 Victory Avenue, Suite 700<br>Dallas, TX 75219 |             |                      | EXAMINER<br>WEI, SIREN  |                        |
|                                                                                                               |             |                      | ART UNIT<br>2467        | PAPER NUMBER           |
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**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.

|                              |                                      |                                     |                                                  |
|------------------------------|--------------------------------------|-------------------------------------|--------------------------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>13/539,584 | <b>Applicant(s)</b><br>NERST ET AL. |                                                  |
|                              | <b>Examiner</b><br>SIREN WEI         | <b>Art Unit</b><br>2467             | <b>AIA (First Inventor to File) Status</b><br>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 MONTHS 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 11/24/14.  
☐ 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) 1-15 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) 1-15 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](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 7/2/12 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) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                   | 3) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)<br>Paper No(s)/Mail Date ____. | 4) <input type="checkbox"/> Other: ____.                                                |

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

## DETAILED ACTION

### *Response to Arguments*

1. Amendments made to overcome claim objections are noted and they are withdrawn.
2. Applicant's arguments with respect to claim 1, 13 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection. Specifically, the amendments made to claim 1 (and similar independent claims) have changed their scope and necessitate new grounds of rejection with new prior art; in particular Setton et al. (US 2010/0287238) is now relied upon to teach/suggest the amended limitation "communicating, concurrently with said communicating via peer-to-peer communication, said conferencing content...via at least one network device..." **(0023 and fig. 1, active sources 102 are shown to be able to engage in direct peer communication and also communication via a network device/relay/receiver)**. Similar independent claims and dependent claims are also revised in accordance.
3. Applicant's arguments with respect to claim 6 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection. Specifically, the amendments made to claim 6 (and similar independent claims) have changed their scope and necessitate new grounds of rejection with new prior art; in particular Kim et al. (US 2006/0281462) is now relied

upon to teach/suggest the amended limitation "suggesting a common coding scheme to a subset of said terminals...". Similar independent claims and dependent claims are also revised in accordance.

4. Applicant's arguments with respect to claim 8 have been considered but are moot because the arguments do not apply to any of the references being used in the current rejection. Specifically, the amendments made to claim 6 (and similar independent claims) have changed their scope and necessitate new grounds of rejection; however, Examiner maintains that the prior art of record, in particular Setton, would teach/suggest the limitations of claim 8 as amended. Although amendments have changed "peer-server based conferencing" to "peer-server based conferencing where said peer-server represents said network device to said peer-to-peer network", the "conferencing-server based conferencing" (**0023 and fig. 1, the relay/receiver terminals**) is now instead relied on as one of the two concurrent technologies of claim 8, and cited to be taught/suggested by Setton under broadest reasonable interpretation. Therefore, Examiner submits that the prior art of record may still teach/suggest amended claim 8. Dependent claims are also revised in accordance.

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

6. Claim 1, 2, 3, 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Ratasuk et al. (US 2007/0258540) in view of Kwon et al. (US 2009/0016232) in view of Setton et al. (US 2010/0287238).

For claim 1, Ratasuk teaches: A method for teleconferencing, the method comprising:

measuring channel quality for a plurality of terminals **(0034, different UEs may be classified into different groups based on channel conditions, which may be inferred from C/I or SNR measurements)** participating in said teleconferencing;

creating at least one group of terminals, from said plurality of terminals measuring channel quality, according to said channel quality measurements **(0034, the UEs may be placed into groups based on their channel conditions/path loss)**;

selecting a coding scheme adaptive to said channel quality measurements **(0034, a UE may only use modulation and coding schemes that are allowed for its group; also see fig. 5 table 3, each group has certain allowed MCS)**;

communicating conferencing content directly between said group of terminals via peer-to-peer communication and using said selected coding scheme; and

communicating, concurrently with said communicating via peer-to-peer communication, said conferencing content with other terminals participating in said conferencing call via at least one network device selected from a group consisting of: a conferencing-server and a peer-server.

Ratasuk does not explicitly teach: *participating in said teleconferencing*; or: *communicating conferencing content directly between said group of terminals via peer-*

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*to-peer communication and using said selected coding scheme; and communicating, concurrently with said communicating via peer-to-peer communication, said conferencing content with other terminals participating in said conferencing call via at least one network device selected from a group consisting of: a conferencing-server and a peer-server.* However, Kwon from an analogous art teaches a p2p communication system which would include teleconferencing **(0005, a mobile communication system may support P2P communication services including video conferencing, comprising teleconferencing)**, and teaches wherein terminals in the system may directly communicate p2p using a modulation and coding scheme **(0026-0027 and fig. 1, MSs (two are shown, though there may be more) can conduct direct p2p communications. 0074 discloses a base station RF receiver which decodes data using a MCS and feeds it to a p2p controller to facilitate signal processing; 0084 discloses wherein a MS may have the same RF/p2p components, thus the MS is also capable of utilizing a MCS to process signals for p2p services).** Kwon also teaches wherein terminals may also communicate p2p services via a relay base station **(0028 and 0034, the BS or MSes can determine if there are difficulties in direct p2p communications, and can switch to utilizing the BS to relay the p2p services; as the p2p services may include video conferencing, in this case the BS may comprise a “conferencing-server” as it handles the conferencing signaling between terminals).** Thus it would have been obvious to one of ordinary skill in the art at the time of invention to adapt the system of Ratasuk to handle p2p communications such as video conferencing, as suggested by Kwon; it would also be obvious to

incorporate the direct p2p functionality of Kwon such that two terminals in the group of Ratasuk may utilize a coding scheme (e.g. a group MCS) to communicate a p2p video conference, and to also allow terminals to communicate with terminals in other groups **(Ratasuk, fig. 5 table 3 lists various groups, so it is obvious there may be others)** via a conferencing-server (e.g. a base station), as suggested by Kwon. The motivation would have been to adapt the system to handle a variety of p2p services in use at the time (such as conferencing), to facilitate more reliable communications between terminals by ensuring that direct p2p signaling utilizes a proper modulation/coding scheme that allows the UEs to have enough resources to use **(Ratasuk, 0034)**, as well as allow a base station to function as an intermediate server to handle p2p services in case terminals have channel difficulties using direct p2p **(Kwon, 0034)**.

Ratasuk does not teach: *communicating, concurrently with said communicating via peer-to-peer communication, said conferencing content with other terminals participating in said conferencing call via at least one network device*. However, Setton from an analogous art teaches wherein a terminal may conference with a large number of terminals **(fig. 1, p2p is used for conferencing with a plurality of terminals)**, and wherein a terminal is able to perform both direct peer-to-peer conferencing and conferencing through a peer server device **(0022-0023 and fig. 1, the ‘active sources’ p2p terminals 102 may transmit content directly between each other as shown by 107. In addition, as shown by 0023 and fig. 1, received content may also be sent to relay/receiver terminals (e.g. 104a) for distribution to other terminals, thus a given ‘active source’ terminal may function as a server in providing**

**generated/received content to its peer terminals, which may also comprise servers or receivers).** Thus it would have been obvious to one of ordinary skill in the art at the time of invention to allow the terminal of Ratasuk and Kwon to concurrently conference via both direct peer-to-peer with another terminal and via a relay network device, such as the BS or a peer server that can relay conference data to other terminals/peers, as suggested by Setton. The motivation would have been to adapt the system to handle a variety of p2p services in use at the time (such as conferencing), and for benefits of providing optimized p2p communications between large number of terminals via an efficient distributed peer-server functionality and data relaying to a large number of terminals (**Setton, 0002**) while still maintaining direct p2p conferencing for closer terminals.

For claim 2, Ratasuk, Kwon, and Setton teach claim 1; Kwon further teaches: *wherein at least one of said conferencing-server and said peer-server provides conversion for said conferencing content adaptive to said other terminals* (**0074 and 0082, the base station RF processor contains converting functionality for both demodulating/decoding received signaling and for transforming modulated data to OFDM symbols for transmission**). Thus it would have been obvious to one of ordinary skill in the art at the time of invention to have the base station/conferencing-server of claim 1 have converting functionality for p2p/conferencing data; the motivation would be to allow the BS/server to properly handle and process p2p signals and relay them between the communicating terminals.

For claim 3, Ratasuk, Kwon, and Setton teach claim 1; Ratasuk further teaches: *wherein said channel quality measurement comprises measuring at least one communication parameter consisting of the list comprising of: available bandwidth, error rate, BER (bit error rate), packet error rate, packet loss, latency, packet latency, initial delay (delay to first returned packet), inter-packet delay (average delay between packets), maximum packet delay, median packet delay, packet delay for N standard deviations, quality of service, signal to noise ratio, interference, and multipath (0034, UE groupings may be inferred from downlink C/I (an interference measurement) or pilot SNR (a signal to noise ratio measurement)).*

Claim 13 recites a computer program product corresponding to the method of claim 1 and is rejected under similar reasoning.

7. Claim 4, 5, 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 2011/0038266) in view of Ratasuk et al. (US 2007/0258540) in view of Kwon et al. (US 2009/0016232) in view of Setton et al. (US 2010/0287238).

For claim 4, Kim teaches: A method for participating in a teleconferencing call, the method comprising steps of:

interrogating for a group of terminals participating in said conferencing call and using a common coding scheme (0133, the UE may check for and detect for UEs which use the same modulation and coding scheme (MCS) level; to do this the UE must parse a position information bitmap to discern the UE grouping with its MCS. 0072, the bitmap can be transmitted with control channels, which would be

**downlink (see 0059). Thus, the UE would be extracting the aforementioned information by ‘interrogating’ the data obtained from a base station);**

communicating conferencing content directly with at least one terminal of said group of terminals via direct peer-to-peer communication and using said coding scheme; and

communicating, concurrently with said communicating directly, said conferencing content with other terminals participating in said conferencing call via at least one network device selected from a group consisting of: a conferencing-server and a peer-server.

Kim teaches interrogating for other terminals, but does not explicitly teach: interrogating *for a group of terminals*. However, Ratasuk from an analogous art teaches wherein a plurality of UEs using a common coding scheme may belong to a group based on having similar characteristics such as channel quality (**0034, different UEs may be classified into different groups based on channel conditions, which may be inferred from C/I or SNR measurements. A UE may only use modulation and coding schemes that are allowed for its group; each group has certain allowed MCS, thus all UEs in a group may be using the same MCS**). Thus it would have been obvious to one of ordinary skill in the art at the time of invention to adapt the grouping system of Ratasuk so that the UEs with the same MCS level received their MCS by having their channel conditions measured and being placed into groups, where their MCS is included in the group’s allowed MCS settings, as suggested by Ratasuk. The motivation would have been to enhance the system to provide an organized

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method by which to assign UEs suitable resources for reliable communication, by grouping them using relative resource requirements, allowing for easy classification and distribution of MCS and transmission resources to maintain acceptable transmission throughput (**Kwon, 0034, for instance a UE which drops packets may be moved into a group where its MCS and allocated resources allow for retransmission opportunities to successfully send data**).

Kim also does not explicitly teach: *participating in said conferencing call, or: communicating conferencing content directly with at least one terminal of said group of terminals via direct peer-to-peer communication and using said coding scheme; and communicating, concurrently with said communicating directly, conferencing content with other terminals participating in said conferencing call via at least one network device selected from a group consisting of: a conferencing-server and a peer-server.*

However, Kwon from an analogous art teaches a p2p communication system which would include conferencing (**0005, a mobile communication system may support P2P communication services including video conferencing, comprising conferencing calling**), and teaches wherein terminals in the system may directly communicate p2p using a modulation and coding scheme (**0026-0027 and fig. 1, MSs (two are shown, though there may be more) can conduct direct p2p communications. 0074 discloses a base station RF receiver which decodes data using a MCS and feeds it to a p2p controller to facilitate signal processing; 0084 discloses wherein a MS may have the same RF/p2p components, thus the MS is also capable of utilizing a MCS to process signals for p2p services**). Kwon also

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teaches wherein terminals may also communicate p2p services via a relay base station **(0028 and 0034, the BS or MSes can determine if there are difficulties in direct p2p communications, and can switch to utilizing the BS to relay the p2p services; as the p2p services may include video conferencing, in this case the BS may comprise a “conferencing-server” as it handles the conferencing signaling between terminals)**. Thus it would have been obvious to one of ordinary skill in the art at the time of invention to adapt the system of Kim and Ratasuk to handle p2p communications such as conferencing calls, as suggested by Kwon; it would also be obvious to incorporate the direct p2p functionality of Kwon such that two terminals in the group of Ratasuk may utilize a coding scheme (e.g. a group MCS) to communicate a p2p conference call, and to also allow terminals to communicate with terminals in other groups **(Ratasuk, fig. 5 table 3 lists various groups, so it is obvious there may be others)** via a conferencing-server (e.g. a base station), as suggested by Kwon. The motivation would have been to adapt the system to handle a variety of p2p services in use at the time (such as conferencing), to facilitate more reliable communications between terminals by ensuring that direct p2p signaling utilizes a proper modulation/coding scheme that allows the UEs to have enough resources to use **(Ratasuk, 0034)**, as well as allow a base station to function as an intermediate server to handle p2p services in case terminals have channel difficulties using direct p2p **(Kwon, 0034)**.

Kim does not teach: *communicating, concurrently with said communicating directly, said conferencing content with other terminals participating in said conferencing*

*call via at least one network device.* However, Setton from an analogous art teaches wherein a terminal may conference with a large number of terminals (**fig. 1, p2p is used for conferencing with a plurality of terminals**), and wherein a terminal is able to perform both direct peer-to-peer conferencing and conferencing through a peer server device (**0022-0023 and fig. 1, the 'active sources' p2p terminals 102 may transmit content directly between each other as shown by 107. In addition, as shown by 0023 and fig. 1, received content may also be sent to relay/receiver terminals (e.g. 104a) for distribution to other terminals, thus a given 'active source' terminal may function as a server in providing generated/received content to its peer terminals, which may also comprise servers or receivers**).

Thus it would have been obvious to one of ordinary skill in the art at the time of invention to allow the terminal of Kim to concurrently conference via both direct peer-to-peer with another terminal and via a relay network device, such as the BS or a peer server that can relay conference data to other terminals/peers, as suggested by Setton. The motivation would have been to adapt the system to handle a variety of p2p services in use at the time (such as conferencing), and for benefits of providing optimized p2p communications between large number of terminals via an efficient distributed peer-server functionality and data relaying to a large number of terminals (**Setton, 0002**) while still maintaining direct p2p conferencing for closer terminals.

For claim 5, Kim, Ratasuk, Kwon, and Setton teach claim 4; Kwon further teaches: *wherein at least one of said conferencing-server and said peer-server provides conversion for said conferencing content adaptive to said other terminals* (**0074 and**

**0082, the base station RF processor contains converting functionality for both demodulating/decoding received signaling and for transforming modulated data to OFDM symbols for transmission).** Thus it would have been obvious to one of ordinary skill in the art at the time of invention to have the base station/peer-server of claim 4 have converting functionality for p2p/conferencing data; the motivation would be to allow the BS/server to properly handle and process p2p signals and relay them between the communicating terminals.

Claim 14 recites a computer program product corresponding to the method of claim 6 and is rejected under similar reasoning.

8. Claim 6, 7, 15 rejected under 35 U.S.C. 103(a) as being unpatentable over Ratasuk et al. (US 2007/0258540) in view of Kim et al. (US 2006/0281462) (hereinafter Kim '06) in view of Kwon et al. (US 2009/0016232).

For claim 6, Ratasuk teaches: A method for a teleconferencing call, comprising:  
interrogating for terminals participating in said conferencing for a parameter comprising a channel quality of each of said terminals **(0034, different UEs may be classified into different groups based on channel conditions, which may be inferred from C/I or SNR measurements; thus, the channel quality must be measured and analyzed from downlink communication, comprising interrogating for said channel condition parameter of each UE);**  
managing a database of said terminal parameters;

managing a database of said terminals using at least one coding scheme **(0034, UEs in certain groups may only use certain MCS and resource configurations; this configuration may be conveyed to the scheduled UEs via messaging. In addition, the scheduler may dynamically reassign a UE to another group based on its current channel quality; thus, there must be some form of database/memory for the scheduler to store configuration data (to be conveyed to the UEs) and be able to keep track of UE groupings (to know they're in a group that needs to be reassigned as necessary)); and**

suggesting a common coding scheme to a subset of said terminals that exhibits, in response to the interrogating, a common channel quality **(0034, once a UE is assigned a group ID it would act in accordance with the configuration for that group (e.g. which MCS and resources to use); as aforementioned, an MCS/resource configuration can be conveyed as a bitmap to the UE whose length is equal to the number of UEs with the group ID, thus the terminal is being informed of the entity/group it is in (via the group ID) and a group MCS (via the configuration data)).**

Ratasuk does not explicitly teach: “*managing a database of said terminal parameters*”, or: “*suggesting a common coding scheme to a subset of said terminals*”. However, Kim '06 from an analogous art teaches wherein a base station may store channel quality data from UEs **(0041-0042 and fig. 4, a base station can receive communication quality data from a MS, and can then analyze the data against predetermined values; it may then receive further pilot signal quality data for**

**analysis. As the BS compares received quality data against stored quality values, it must have some form of memory to store/process quality data including that from UEs, comprising a database).** Thus it would have been obvious to one of ordinary skill in the art at the time of invention to incorporate a storage/database for the channel quality data of the UEs (claimed 'terminal parameters') into the BS, so it can measure/gather channel condition data for storage and analysis, as suggested by Kim '06. The motivation would have been to enhance the BS to hold collected terminal quality data, which would allow it to track UEs based on their channel quality/QoS data (Kim '06, 0037) for applications such as analyzing the data for handover determination. Kim '06 also teaches wherein a coding scheme may be 'suggested' to a UE for usage (0034, a BS may recommend MCS level groups to a MS, and it can use one of those MCS levels; also see 0036, recommending MCS levels is an alternative to just selecting a MCS level). Thus it would have been obvious to one of ordinary skill in the art at the time of invention to suggest/recommend a same coding scheme to the terminals of Ratasuk instead of directly selecting the scheme, as suggested by Kim '06. The motivation would have been to allow the terminals some flexibility in which MCS to use and to properly inform them of the choice, so that a terminal can be informed but still make a MCS choice that accounts for its channel state (Kim '06, 0035).

Ratasuk also does not explicitly teach: *terminals participating in said conferencing*. However, Kwon from an analogous art teaches an analogous terminal-BS p2p communication system which would include support for conferencing (0005, a mobile communication system may support P2P communication services

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**including video conferencing, comprising conferencing calling), and teaches wherein terminals in the system may communicate p2p services using a modulation and coding scheme (0026-0027 and fig. 1, MSs (two are shown, though there may be more) can conduct direct p2p communications. 0074 discloses a base station RF receiver which decodes data using a MCS and feeds it to a p2p controller to facilitate signal processing; 0084 discloses wherein a MS may have the same RF/p2p components, thus the MS is also capable of utilizing a MCS to process signals for p2p services).** Thus it would have been obvious to one of ordinary skill in the art at the time of invention to adapt the system of Ratasuk and Kim '06 to handle p2p communications, such as conferencing calls, using the system infrastructure and MCS, as suggested by Kwon. The motivation would have been to adapt the system to handle a variety of p2p services in use at the time (such as conferencing), and to facilitate reliable communications between terminals by ensuring that their p2p signaling utilizes a proper modulation/coding scheme that allows the UEs to have sufficient resources to use **(Ratasuk, 0034).**

For claim 7, Ratasuk, Kim '06, and Kwon teach claim 6; Ratasuk further teaches: *wherein said interrogation for said channel quality measurement comprises measuring at least one communication parameter consisting of the list comprising of: available bandwidth, error rate, BER (bit error rate), packet error rate, packet loss, latency, packet latency, initial delay (delay to first returned packet), inter-packet delay (average delay between packets), maximum packet delay, median packet delay, packet delay for N standard deviations, quality of service, signal to noise ratio, interference, and multipath*

**(0034, UE groupings may be inferred from downlink C/I (an interference measurement) or pilot SNR (a signal to noise ratio measurement)).**

Claim 15 recites a computer program product corresponding to the method of claim 6 and is rejected under similar reasoning.

9. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 2011/0038266) in view of Cai et al. (US 2008/0232301) in view of Setton et al. (US 2010/0287238).

For claim 8, Kim teaches: A network device comprising:

a communication module operative to enable said network device to communicate in a communication network **(0040 and fig. 1, the UEs 20 have receivers and transmitters in a communication network);**

a peer communication module operative to enable said network device to participate as a peer in a peer-to-peer network, said a peer-to-peer network operating in said communication network;

a module for measuring channel quality of said network device in said communication network;

a module for selecting at least one coding scheme adaptive to said channel quality;

a module for interrogating for a group of terminals participating in a conferencing call and using a common coding scheme compatible with at least one of said selected at least one coding scheme **(0133, the UE may check for and detect for UEs which**

**use the same modulation and coding scheme (MCS) level; to do this the UE must parse a position information bitmap to discern the UE grouping with its MCS.**

**0072, the bitmap can be transmitted with control channels, which would be downlink (see 0059). Thus, the UE would be extracting the aforementioned information by ‘interrogating’ for the data about terminals obtained from a base station);**

a module for participating in a conference call, concurrently using at least two conferencing technologies selected from a group consisting of: conferencing-server-based conferencing, peer-server based conferencing where said peer-server represents said network device to said peer-to-peer network, and peer-to-peer conferencing.

Kim does not explicitly teach: *a group of terminals...using a common coding scheme, or: a module for measuring channel quality of said network device in said communication network; a module for selecting at least one coding scheme adaptive to said channel quality.* However, Cai from an analogous art teaches wherein a UE may be able to select a modulation and coding scheme for itself based on its measurements of channel quality (**Abstract, the mobile station determines an MCS based on channel quality measurements**), and wherein terminals may be grouped based on sharing a MCS (**0022, UE groupings may be defined, with a group property defined by a common MCS**). Thus it would have been obvious to one of ordinary skill in the art at the time of invention to allow the UEs taught by Kim to be able to determine their MCS levels by measuring channel quality, as suggested by Cai, as well as to group UEs together based on their MCS; the motivation would have been to distribute MCS

determination functionality to the terminals, improving efficiency as the terminals are in an advantageous position to measure their channel qualities and thus be able to already select a proper MCS, relieving this processing from other network entities; grouping the UEs would also better organize the terminals and allow for efficient control in specifying coding rate/properties and assigning suitable resources **(Cai, 0029)**.

Kim also does not explicitly teach: *participating in a conferencing call, or: a module for participating in a conference call, concurrently using at least two conferencing technologies selected from a group consisting of: conferencing-server-based conferencing, peer-server based conferencing where said peer-server represents said network device to said peer-to-peer network, and peer-to-peer conferencing.*

However, Setton from an analogous art teaches a p2p communication system in which groups of terminals may engage in p2p communication including conferencing **(0016 and fig. 1, a peer-to-peer network may comprise different portions/groups of terminals communicating p2p data; 0005 discloses wherein multi-way communications may include conferencing; also see 0017, the network terminals may pertain to teleconferencing terminals)**, and teaches wherein a p2p terminal may be able to participate in said conferencing by utilizing both “conferencing-server conferencing” and “peer-to-peer conferencing” functionality **(0022-0023 and fig. 1, the ‘active sources’ p2p terminals 102 may transmit content directly between each other as shown by 107. In addition, as shown by 0023 and fig. 1, received content may also be sent to relay/receiver terminals (e.g. 104a) for distribution to other terminals, thus a given ‘active source’ terminal would function as a ‘conferencing**

**server' under broadest reasonable interpretation, as it provides generated/received conferencing content to its peer terminals, which may also comprise 'conferencing servers' as they may distribute conferencing data).** Thus it would have been obvious to one of ordinary skill in the art at the time of invention to adapt the communications system of Kim and Cai to handle p2p communications, such as conferencing calls, using the terminal group infrastructure as suggested by Setton; it would also have been obvious to allow the terminal of Kim possess the terminal functionalities of communication with both p2p direct link and as a peer-server to provide/relay content to other terminals. The motivation would have been to adapt the system to handle a variety of p2p services in use at the time (such as conferencing), and for benefits of providing optimized p2p communications between large number of terminals via an efficient distributed peer-server functionality and data relaying to groups of terminals (**Setton, 0002**).

10. Claim 9, 10, 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 2011/0038266) in view of Cai et al. (US 2008/0232301) in view of Setton et al. (US 2010/0287238) in view of Kwon et al. (US 2009/0016232).

For claim 9, Kim, Cai, and Setton teach claim 8; Setton further teaches direct p2p conferencing (**0022-0023 and fig. 1, 'active source' terminals can directly communicate p2p with each other**) and communicating p2p with terminals using a 'other' conferencing technology (**0023 and fig. 1, received content may also be sent to relay/receiver terminals by active source terminals, which would thus act as a**

**server for its peer terminals)**, but not explicitly: said module for participating in said conference call is operative to: communicate said conferencing content directly with said group of terminals *using said common coding scheme* via peer-to-peer conferencing *using said selected coding scheme*; and communicate concurrently said conferencing content *with other terminals* participating in said conferencing call using one or more other conferencing technologies. However, Kwon from an analogous art teaches a p2p communications system wherein terminals may communicate p2p directly using a MCS (**0026-0027 and fig. 1, MSs (two are shown, though there may be more) can conduct direct p2p communications. 0074 discloses a base station RF receiver which decodes data using a MCS and feeds it to a p2p controller to facilitate signal processing; 0084 discloses wherein a MS may have the same RF/p2p components, thus the MS is also capable of utilizing a MCS to process signals for p2p services**). Thus it would have been obvious to one of ordinary skill in the art at the time of invention to adapt the system of claim 9 to allow the network device to be able to directly communicate p2p with other terminals using the common coding scheme (**Kim, fig. 16, multiple terminals in a network may use the same MCS level; in light of Kwon it is obvious that these UEs may communicate**), as suggested by Kwon. It would also be obvious to allow terminals to concurrently communicate with other terminals using a separate technology (**Cai 0075 discloses mobile devices can communicate with each other, and does not explicitly disclose only terminals in the same MCS group can communicate. Also see Setton 0023 and fig. 1, 'active sources' p2p terminals 102 may transmit content**

**directly between each other as shown by 107 and by transmitting received conferencing data to other relay/receiver terminals)** via a server such as a peer-server/'active source' terminal. The motivation would have been to adapt the system to handle a variety of p2p services in use at the time (such as conferencing), to facilitate reliable p2p between terminals by ensuring any direct signaling utilizes a proper MCS that gives terminals enough resources to use, as well as still allow a terminal to function as a server to handle p2p services for its peers regardless of MCS, facilitating successful data distribution/relaying to large numbers of terminals (**Setton, 0002**) while still maintaining direct p2p conferencing for closer terminals.

For claim 10, Kim, Cai, Setton, and Kwon teach claim 9; Setton further teaches: *wherein said communicating conferencing content with said other terminals participating in said conferencing call comprises communicating said conferencing content via at least one network device selected from a group consisting of: a conferencing-server and a peer-server* (**0023 and fig. 1, the 'active source' terminals, by communicating content to relay/receivers 104, would act as peer-servers in that they can provide/serve p2p/conferencing content to other peer terminals**). Thus it would have been obvious to one of ordinary skill in the art at the time of invention to have the other terminal conferencing functionality of claim 9 to comprise sending/distributing the p2p content as a peer-server, as suggested by Setton; the motivation would have been to provide optimized p2p communications for large number of peer terminals via an efficient distributed peer-server functionality/data relaying by active source terminals (**Setton, 0002**).

For claim 11, Kim, Cai, Setton, and Kwon teach claim 10; Kwon further teaches: *wherein at least one of said conferencing-server and said peer-server provides conversion for said conferencing content adaptive to said other terminals (0074 and 0082, the base station RF processor contains converting functionality for both demodulating/decoding received signaling and for transforming modulated data to OFDM symbols for transmission)*. Thus it would have been obvious to one of ordinary skill in the art at the time of invention to have the base station/conferencing-server of claim 10 have converting functionality for p2p/conferencing data; the motivation would be to allow the BS/server to properly handle and process p2p signals and relay them between the communicating terminals.

11. Claim 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (US 2011/0038266) in view of Cai et al. (US 2008/0232301) in view of Setton et al. (US 2010/0287238) in view of Cai et al. (US 2007/0117579) (hereinafter Cai '579).

For claim 12, Kim, Cai, Setton teach claim 8, but not explicitly: *wherein said channel quality measurement comprises measuring at least one communication parameter consisting of the list comprising of: available bandwidth, error rate, BER (bit error rate), packet error rate, packet loss, latency, packet latency, initial delay (delay to first returned packet), inter-packet delay (average delay between packets), maximum packet delay, median packet delay, packet delay for N standard deviations, quality of service, signal to noise ratio, interference, and multipath*. However, Cai '579 from an analogous art teaches wherein a mobile station can perform an interference

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measurement to determine its MCS **(0022, a mobile station may measure SINR (comprising an interference measurement) and use it to select an appropriate MCS)**. Thus it would have been obvious to one of ordinary skill in the art at the time of invention to have the channel quality measurement of claim 8 comprise an interference value such as a SINR, as suggested by Cai '579; the motivation would be to allow the terminal perform a measurement relevant to channel conditions, allowing for a suitable selection of MCS most appropriate for the terminal's interference.

### ***Conclusion***

12. 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.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SIREN WEI whose telephone number is (571)272-0687.

The examiner can normally be reached on Mon-Thurs 7:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan A. Phillips can be reached on 571-272-3940. 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.

/SW/

Patent Examiner  
Art Unit 2467

/HASSAN PHILLIPS/

Supervisory Patent Examiner, Art Unit 2467