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H04W 76/02 (2009.01) H04W 28/04 (2009.01)
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(75) Inventors/Applicants (for US only): **SHUMAN, Mohammed, A.** [US/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US). **GOEL, Amit** [IN/US]; 5775 Morehouse Drive, San Diego, CA 92121 (US).

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available):

ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))

[Continued on next page]

(54) Title: PHYSICAL-LAYER SYSTEM PRIORITIZATION AND COMMUNICATION SESSION MANAGEMENT WITHIN A WIRELESS COMMUNICATIONS SYSTEM

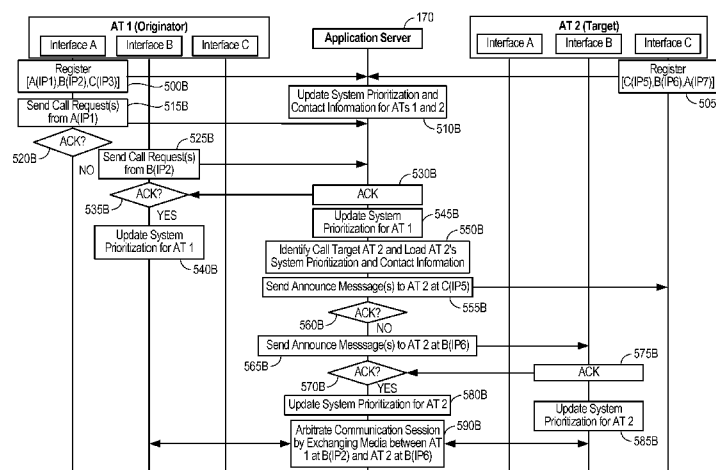


FIG. 5B

(57) Abstract: Embodiments are directed to selecting a physical layer for an access terminal's (AT's) participation in a communication session. In an embodiment, the AT can register its priorities for multiple physical-layer systems as well as contact information by which an application server can contact the AT over each system. The AT selectively updates the system prioritization and/or contact information. When the AT joins or initiates a communication session, the application server supports the AT on a highest-priority system through which the AT can be contacted. The system supporting the AT's session can change upon request by the AT, the initiative of the application server and/or a detected triggering event. In a further embodiment, multiple systems can be used concurrently to support the AT's session, such that the AT can send and/or receive signaling and/or media for at least a portion of the communication session over the multiple systems concurrently.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
24 November 2011

INTERNATIONAL SEARCH REPORT

International application No
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A. CLASSIFICATION OF SUBJECT MATTER
 INV. H04W8/24 H04W76/02 H04W48/18
 ADD. H04W88/06 H04W28/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 H04W H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2007/042777 A1 (GOVINDARAJAN RANGAPRASAD [US] ET AL) 22 February 2007 (2007-02-22) paragraph [0002] - paragraph [0007] paragraph [0016] - paragraph [0019] paragraph [0047] - paragraph [0048] claims 3,4,5,8	1,9,64, 65,72, 73,80,81
Y	US 2004/235463 A1 (PATEL ASHISH RAOJIBHAI [US]) 25 November 2004 (2004-11-25) paragraph [0001] - paragraph [0009] paragraph [0019] - paragraph [0031] claims 5,13	1,9,64, 65,72, 73,80,81
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search 27 September 2011	Date of mailing of the international search report 06/10/2011
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Vaskimo, Kimmo
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/021997

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/021997

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2005/233780 A1 (JANI PULKKINEN [FI] ET AL) 20 October 2005 (2005-10-20) the whole document	1,9,64, 65,72, 73,80,81
A	US 2006/268711 A1 (DORADLA ANIL K [US] ET AL) 30 November 2006 (2006-11-30) the whole document	1,9,64, 65,72, 73,80,81
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Y	paragraph [0001] - paragraph [0013] paragraph [0036] paragraph [0041] - paragraph [0049]	45-52, 78,86
X	GB 2 380 898 A (MOTOROLA INC [US]) 16 April 2003 (2003-04-16)	16,25, 30,40, 53, 66-71, 74-77, 79, 82-85,87
Y	page 1 - page 7 page 18 - page 19 claims 12,13	45-52, 78,86
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INTERNATIONAL SEARCH REPORT

International application No

PCT/US2011/021997

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2003/134637 A1 (COOPER ROTEM [US]) 17 July 2003 (2003-07-17) paragraph [0003] - paragraph [0016] paragraph [0028] paragraph [0043] -----	16,30, 66,68, 74,76, 82,84
Y	WO 2006/109977 A2 (LG ELECTRONICS INC [KR]; KIM YONG HO [KR]; KWAK YONG WON [KR]; LEE JIN) 19 October 2006 (2006-10-19) page 1 - page 9 page 33 - page 37 -----	16,30, 66,68, 74,76, 82,84
Y	US 2006/172737 A1 (HIND HUGH [CA] ET AL) 3 August 2006 (2006-08-03) paragraph [0002] - paragraph [0014] paragraph [0056] -----	16,25, 30,40, 53, 66-71, 74-77, 79, 82-85,87
Y	US 2007/178933 A1 (NELSON JOAKIM [SE]) 2 August 2007 (2007-08-02) paragraph [0001] - paragraph [0028] paragraph [0047] -----	16,30, 66,68, 74,76, 82,84
A	US 5 862 480 A (WILD JOHANNA ALEXANDRA [US] ET AL) 19 January 1999 (1999-01-19) the whole document -----	16,30, 66,68, 74,76, 82,84
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Y	WO 2007/126814 A2 (TELCORDIA TECH INC [US]) 8 November 2007 (2007-11-08) paragraph [0001] - paragraph [0012] paragraph [0047] - paragraph [0048] claims 1,9 ----- -/--	25,40, 53,67, 69-71, 75,77, 79,83, 85,87

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2011/021997

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2005/239498 A1 (DORENBOSCH JHEROEN P [US] ET AL) 27 October 2005 (2005-10-27) paragraph [0001] - paragraph [0005] paragraph [0025] paragraph [0032] paragraph [0038] - paragraph [0040] -----	25,40, 53,67, 69-71, 75,77, 79,83, 85,87
Y	EP 1 962 471 A1 (ALCATEL LUCENT [FR]) 27 August 2008 (2008-08-27) paragraph [0001] - paragraph [0031] paragraph [0033] - paragraph [0034] paragraph [0039] figures 1,2 -----	25,40, 53,67, 69-71, 75,77, 79,83, 85,87
A	WO 03/051083 A2 (NORTEL NETWORKS LTD [CA]) 19 June 2003 (2003-06-19) the whole document -----	25,40, 53,67, 69-71, 75,77, 79,83, 85,87
Y	EP 1 956 743 A1 (RESEARCH IN MOTION LTD [CA]) 13 August 2008 (2008-08-13) paragraph [0001] - paragraph [0013] -----	45-52, 78,86
Y	WO 2008/040931 A1 (FUJITSU LTD [JP]; HART MICHAEL JOHN BEEMS [GB]; ZHOU YUEFENG [GB]; VAD) 10 April 2008 (2008-04-10) page 1 - page 9 page 11 -----	45-52, 78,86
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International application No

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FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-15, 64, 65, 72, 73, 80, 81

A method of registering a priority of physical layer systems, where an access terminal registers by reporting, to an application server, the system prioritization of each of the plurality of systems.

2. claims: 16-24, 30-39, 66, 68, 74, 76, 82, 84

A method of setting up a communication session, where transmission of a session initialization request is attempted, and where, in case the attempt is unsuccessful, the session initialization request is re-sent on at least one of a plurality of systems other than the highest priority system.

3. claims: 25-29, 40-44, 53-63, 67, 69-71, 75, 77, 79, 83, 85, 87

A method of setting up a communication session, where a session initiation request is received from an access terminal on a given system, where it is determined whether the given system corresponds to the highest priority system among previously registered system prioritization, and where the system prioritization is updated such, that the system, upon which the session initiation request is received, is made the highest priority system.

4. claims: 45-52, 78, 86

A method of conducting a communication session, where a signaling message is periodically sent on the highest priority system, and where the system prioritization is selectively updated based on whether the periodic sending results in an acknowledgement.
