

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
10 January 2008 (10.01.2008)

PCT

(10) International Publication Number
WO 2008/005503 A3

(51) International Patent Classification:

H04L 12/56 (2006.01) **H04B 7/26** (2006.01)
H04B 7/005 (2006.01) **H04L 1/00** (2006.01)

(21) International Application Number:

PCT/US2007/015496

(22) International Filing Date: 5 July 2007 (05.07.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/818,848 6 July 2006 (06.07.2006) US

(71) Applicant (for all designated States except US): **INTER-DIGITAL TECHNOLOGY CORPORATION** [US/US];
3411 Silverside Road, Concord Plaza, Suite 105, Hagley Building, Wilmington, DE 19810 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **PINHEIRO, Ana Lucia** [US/US]; 1118 Skiles Blvd., West Chester, PA 19382 (US). **RUDOLF, Mariam** [DK/CA]; 1958 Rue

Workman, Montreal, Québec, H3J 2P3 (CA). **HAIM, John, W.** [US/US]; 1848 Longfellow Street, Baldwin, NY 11510 (US).

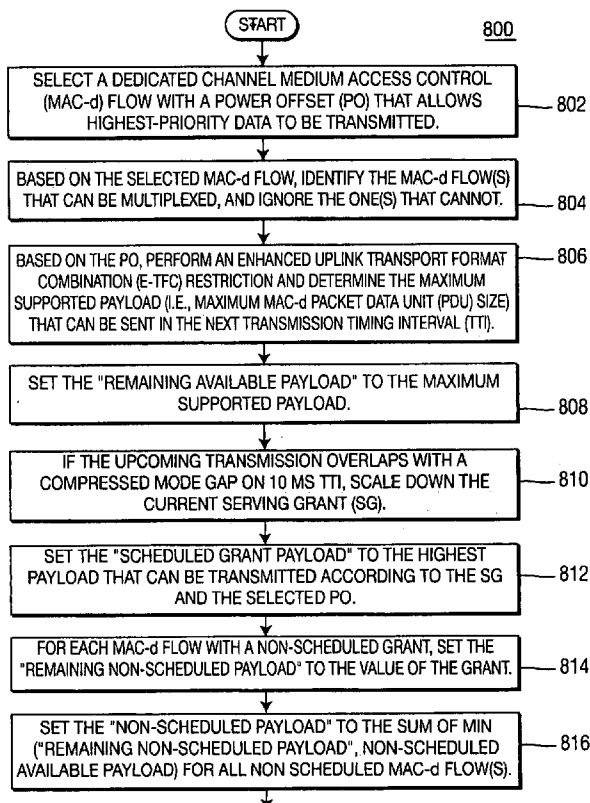
(74) Agent: **BALLARINI, Robert, J.**; Volpe And Koenig, P.C., United Plaza, Suite 1600, 30 S. 17th Street, Philadelphia, PA 19103 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: WIRELESS COMMUNICATION METHOD OF SELECTING AN ENHANCED UPLINK TRANSPORT FORMAT COMBINATION BY SETTING A SCHEDULING GRANT PAYLOAD TO THE HIGHEST PAYLOAD THAT CAN BE TRANSMITTED



(57) Abstract: The present invention is related to a method of selecting an enhanced uplink (EU) transport format combination (E-TFC). A scheduling grant payload (SGP) is set to the highest payload that may be transmitted.

WO 2008/005503 A3



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL,
PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments*

Published:

— *with international search report*

(88) Date of publication of the international search report:

17 April 2008

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/015496

| | | |
|--|--|---|
| A. CLASSIFICATION OF SUBJECT MATTER INV. H04L12/56 H04B7/005 H04B7/26 H04L1/00 | | |
| 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) H04B 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, INSPEC | | |
| C. DOCUMENTS CONSIDERED TO BE RELEVANT | | |
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | "Universal Mobile Telecommunications System (UMTS); Medium Access Control (MAC) protocol specification (3GPP TS 25.321 version 7.1.0 Release 7); ETSI TS 125 321" ETSI STANDARDS, EUROPEAN TELECOMMUNICATIONS STANDARDS INSTITUTE, SOPHIA-ANTIPO, FR, vol. 3-R2, no. V710, June 2006 (2006-06), XP014035575 ISSN: 0000-0001 | 1-19,25 |
| X | 4.2.3 Traffic Related Architecture - UE Side 4.3.1. Transport Channels 11.8.1.4 E-TFC Selection Annex C: Pseudo-Code for E-TFC Selection <div style="text-align: center;">----- -/--</div> | 20-24, 26,27 |
| <div style="display: flex; justify-content: space-between;"> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex. </div> | | |
| * Special categories of cited documents : <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*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)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>*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</p> <p>*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</p> <p>*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.</p> <p>*Z* document member of the same patent family</p> </div> </div> | | |
| Date of the actual completion of the international search <div style="text-align: center; font-size: 1.2em;">7 February 2008</div> | | Date of mailing of the international search report <div style="text-align: center; font-size: 1.2em;">20/02/2008</div> |
| Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016 | | Authorized officer <div style="text-align: center; font-size: 1.2em;">Palacián Lisa, Marta</div> |

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2007/015496

| C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT | | |
|--|--|-----------------------|
| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
| A | PARKVALL S ET AL: "WCDMA Enhanced Uplink - Principles and Basic Operation" VEHICULAR TECHNOLOGY CONFERENCE, 2005. VTC 2005-SPRING. 2005 IEEE 61ST STOCKHOLM, SWEDEN 30 APRIL - 01 MAY 2005, PISCATAWAY, NJ, USA, IEEE, 30 May 2005 (2005-05-30), pages 1411-1415, XP010855655 ISBN: 0-7803-8887-9 | 1-19 |
| X | Abstract II. Basic Principles IV.C. Fast Scheduling ----- | 20, 26 |
| X | EP 1 643 690 A (MATSUSHITA ELECTRIC IND CO LTD [JP]) 5 April 2006 (2006-04-05) abstract paragraph [0003] paragraph [0013] paragraph [0021] - paragraph [0024] paragraph [0051] - paragraph [0056] paragraph [0101] - paragraph [0104] paragraph [0135] - paragraph [0137] ----- | 20-24, 26, 27 |
| P, X | WO 2006/118831 A (INTERDIGITAL TECH CORP [US]; TERRY STEPHEN E [US]) 9 November 2006 (2006-11-09) abstract paragraph [0004] - paragraph [0007] paragraph [0036] paragraph [0039] paragraph [0048] - paragraph [0053] paragraph [0057] paragraph [0065] - paragraph [0067] ----- | 20-24, 26, 27 |
| P, X | WO 2006/113829 A (INTERDIGITAL TECH CORP [US]; TERRY STEPHEN E [US]; ZHANG GUODONG [US];) 26 October 2006 (2006-10-26) paragraph [0026] paragraph [0030] - paragraph [0038] ----- | 20-24, 26, 27 |
| E | US 2007/155335 A1 (LOVE ROBERT T [US] ET AL) 5 July 2007 (2007-07-05) abstract paragraph [0016] paragraph [0021] paragraph [0023] paragraph [0026] - paragraph [0038] ----- | 20, 26 |

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/015496

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 allsearchable 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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-19

Method of and apparatus for selecting an enhanced uplink transport format combination by calculating the value of a scheduling grant payload.

2. claims: 20-27

Method of and apparatus for selecting an enhanced uplink transport format combination by selecting a dedicated channel medium access control flow with a power offset that allows highest-priority data to be transmitted.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2007/015496

| Patent document cited in search report | | Publication date | Patent family member(s) | Publication date |
|---|----|---------------------|----------------------------|---------------------|
| EP 1643690 | A | 05-04-2006 | CA 2581490 A1 | 13-04-2006 |
| | | | CN 101048982 A | 03-10-2007 |
| | | | WO 2006037492 A1 | 13-04-2006 |
| | | | JP 2007295588 A | 08-11-2007 |
| | | | JP 4017658 B2 | 05-12-2007 |
| | | | JP 2007533222 T | 15-11-2007 |
| | | | KR 20070053365 A | 23-05-2007 |
| | | | US 2007121542 A1 | 31-05-2007 |
| WO 2006118831 | A | 09-11-2006 | AU 2006242677 A1 | 09-11-2006 |
| | | | CA 2606500 A1 | 09-11-2006 |
| | | | EP 1878147 A2 | 16-01-2008 |
| | | | US 2006268938 A1 | 30-11-2006 |
| WO 2006113829 | A | 26-10-2006 | CA 2605498 A1 | 26-10-2006 |
| | | | EP 1875626 A2 | 09-01-2008 |
| | | | US 2006268884 A1 | 30-11-2006 |
| US 2007155335 | A1 | 05-07-2007 | NONE | |