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[Continued on next page]

(54) Title: CSI REPORTING FOR MULTIPLE CARRIERS WITH DIFFERENT SYSTEM CONFIGURATIONS

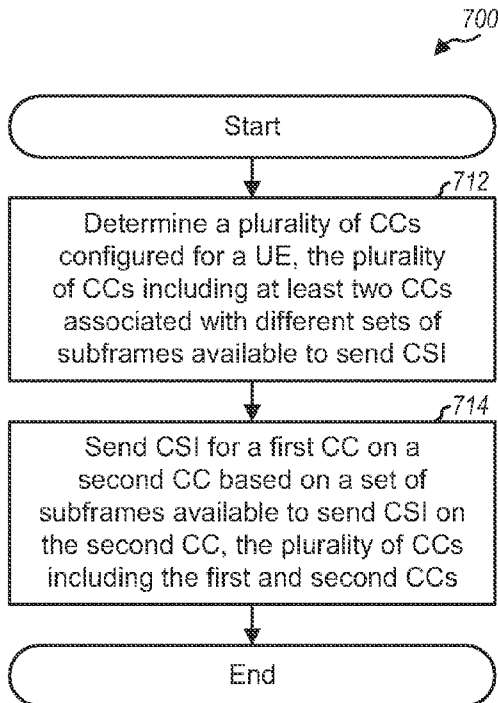


FIG. 7

(57) Abstract: Techniques to support periodic reporting of channel state information (CSI) for multiple component carriers (CCs) with different system configurations are disclosed. A user equipment (UE) is configured with multiple CCs for carrier aggregation. Each CC is associated with a particular system configuration, which indicates whether FDD or TDD is utilized and, if TDD is utilized, a particular uplink-downlink configuration for the CC. Each CC is associated with a set of subframes available to send CSI on that CC, which is determined based on the system configuration of the CC. The multiple CCs configured for the UE include at least two CCs associated with different system configurations and different sets of subframes available to send CSI. The UE sends CSI for a first CC on a second CC based on a set of subframes available to send CSI on the second CC.

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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).

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- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>-----</p> <p>LG ELECTRONICS: "Details of eICIC in Macro-Pico case", 3GPP DRAFT; R1-106143, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, vol. RAN WG1, no. Jacksonville, USA; 20101115, 9 November 2010 (2010-11-09), XP050489602, [retrieved on 2010-11-09] sections 2.1, 2.2</p>	<p>37, 38</p> <p>1,16,21, 26,27, 32,36,40</p>
Y	<p>-----</p> <p>ITU-R AD HOC: "'LTE-Advanced" material for Rec. ITU-R M.[IMT.RSPEC]", 3GPP DRAFT; RT-110016, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, vol. RAN WG2, no. Dublin, Ireland; 20110117, 18 January 2011 (2011-01-18), XP050493096, [retrieved on 2011-01-18] section A.1; figures 1.8, 1.9</p>	<p>2-5,28</p>
A	<p>-----</p> <p>WO 2010/051752 A1 (DATANG MOBILE COMM EQUIPMENT [CN]; PAN XUEMING [CN]; XIAO GUOJUN [CN]) 14 May 2010 (2010-05-14) abstract</p>	<p>2-5,28</p>
L	<p>-& EP 2 355 567 A1 (DATANG MOBILE COMM EQUIP CO [CN]) 10 August 2011 (2011-08-10) cited as family member using official EPO language abstract; figures 3-5; table 1 paragraph [0001] paragraph [0006] - paragraph [0007] paragraph [0011] - paragraph [0013] paragraph [0018] paragraph [0032] - paragraph [0053]</p> <p>-----</p> <p style="text-align: center;">-/--</p>	<p>2-5,28</p>

INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ALCATEL-LUCENT ET AL: "Periodic CQI/PMI/RI reporting in case of multiple DL CCs", 3GPP DRAFT; R1-110219 PERIODIC CSI REPORT FINAL, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, vol. RAN WG1, no. Dublin, Ireland; 20110117, 12 January 2011 (2011-01-12), XP050490320, [retrieved on 2011-01-12] sections 1, 2	1,6,12, 13,16, 19,21, 24,27, 31,32, 35,36,39
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A	----- QUALCOMM INCORPORATED: "CQI for CA", 3GPP DRAFT; R1-103537 CQI FOR CA, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, vol. RAN WG1, no. Dresden, Germany; 20100628, 22 June 2010 (2010-06-22), XP050449044, [retrieved on 2010-06-22] sections 1, 2	1,6,12, 13,16, 19,21, 24,27, 31,32, 35,36,39
Y	----- WO 2011/041623 A1 (INTERDIGITAL PATENT HOLDINGS [US]; NAYEB NAZAR SHAHROKH [CA]; PAN KYLE) 7 April 2011 (2011-04-07) paragraph [0079] - paragraph [0080] paragraph [0092] paragraph [0109] paragraph [0117] - paragraph [0120] paragraph [0181] paragraph [0241] paragraph [0291] ----- -/--	7-10,17, 18,22, 23,29, 30,33, 34,37,38

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2012/033076

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>WO 2010/131919 A2 (LG ELECTRONICS INC [KR]; KO HYUN SOO [KR]; LEE MOON IL [KR]; CHUNG JAE) 18 November 2010 (2010-11-18)</p> <p>paragraph [0095] - paragraph [0097] paragraph [0120] paragraph [0126] - paragraph [0127] paragraph [0151] - paragraph [0152]</p> <p>-----</p>	7-10, 17, 18, 22, 23, 29, 30, 33, 34, 37, 38
Y	<p>EP 2 230 786 A1 (PANASONIC CORP [JP]) 22 September 2010 (2010-09-22)</p> <p>paragraph [0022] - paragraph [0023] paragraph [0029] paragraph [0032] paragraph [0038] - paragraph [0039] paragraph [0044] paragraph [0074] - paragraph [0075] paragraph [0083] - paragraph [0084] paragraph [0098] paragraph [0101] paragraph [0110] - paragraph [0111]</p> <p>-----</p>	11, 14, 15, 20, 25
A	<p>ERICSSON ET AL: "Rel-10 UE capabilities", 3GPP DRAFT; R2-110496 REL-10 UE CAPABILITIES, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FRANCE, vol. RAN WG2, no. Dublin, Ireland; 20110117, 18 January 2011 (2011-01-18), XP050493093, [retrieved on 2011-01-18] sections 2.2, 2.3, 2.4</p> <p>-----</p>	11, 14, 15, 20, 25

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/033076

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

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

1. claims: 1-5, 16, 21, 26-28, 32, 36, 40

Associating component carriers with different system configurations.

2. claims: 1, 6, 12, 13, 16, 19, 21, 24, 27, 31, 32, 35, 36, 39

Periodic CSI reporting.

3. claims: 1, 7-10, 16-18, 21-23, 27, 29, 30, 32-34, 36-38

Sending CSI for a plurality of component carriers.

4. claims: 1, 11, 14-16, 20, 21, 25

Measuring/delaying transmission of CSI for the first component carrier.

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2012/033076

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