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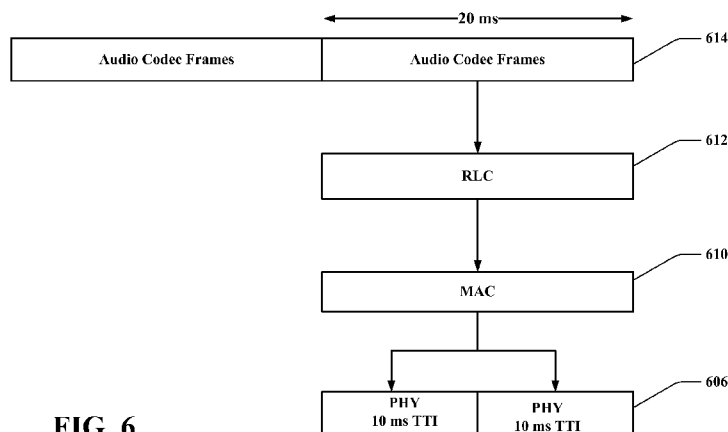


FIG. 6

(57) Abstract: A method, an apparatus, and a computer program product for wireless communication are provided. A transmitting apparatus receives a packet at a MAC layer object and generates a first MAC layer output and at least one duplicate MAC layer output based on the received packet. The MAC layer output and duplicate MAC layer output are fed to a PHY layer object. The PHY layer object can transmit first PHY layer information in a first TTI and begin transmitting a second, duplicate PHY layer information in a second, consecutive TTI following the first TTI. The receiving apparatus receives first information in a first TTI and receives duplicate information in a second, consecutive TTI following the first TTI. The receiving apparatus attempts to early decode the information in the first TTI, and when unsuccessful, attempts to decode the information in the second TTI.



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/027497

A. CLASSIFICATION OF SUBJECT MATTER
INV. H04W80/02
ADD.

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 H04B

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 practicable, 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.
X	WO 2008/151409 A1 (RESEARCH IN MOTION LTD [CA]; CAI ZHIJUN [US]; WOMACK JAMES EARL [US];) 18 December 2008 (2008-12-18) page 1, line 3 - line 6 page 8, line 5 - line 21; figures 1C,1D -----	1-12
A	US 6 407 991 B1 (MEIER ROBERT C [US]) 18 June 2002 (2002-06-18) column 5, line 26 - line 50 -----	1-12
A	WO 2011/063569 A1 (QUALCOMM INC [US]; XUE YISHENG [CN]; FAN MICHAEL M [CN]; LIANG JIYE [C]) 3 June 2011 (2011-06-03) cited in the application abstract -----	1-29
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

<p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent 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>	<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>"&" document member of the same patent family</p>
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Date of the actual completion of the international search 31 January 2014	Date of mailing of the international search report 12/02/2014
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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 Hultsch, Wolfgang
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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/027497

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
T	<p>QUALCOMM INCORPORATED: "Introducing Enhancements to CS voice over DCH", 3GPP DRAFT; R1-123809 INTRODUCING ENHANCEMENTS TO CS VOICE OVER DCH, 3RD GENERATION PARTNERSHIP PROJECT (3GPP), MOBILE COMPETENCE CENTRE ; 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS CEDEX ; FR</p> <p>, vol. RAN WG1, no. Qingdao, China; 20120813 - 20120817 5 August 2012 (2012-08-05), XP050661662, Retrieved from the Internet: URL:http://www.3gpp.org/ftp/tsg_ran/WG1_RL1/TSGR1_70/Docs/ [retrieved on 2012-08-05] page 5, paragraph 4.1</p>	1-12
X	<p>----- WO 2011/103153 A2 (QUALCOMM INC [US]; GEIRHOFER STEFAN [US]; LUO TAO [US]; PALANKI RAVI [] 25 August 2011 (2011-08-25) paragraph [0039] - paragraph [0041] paragraph [0111]</p>	13-29
A	<p>----- US 2009/303968 A1 (JOU YU-CHEUN [US] ET AL) 10 December 2009 (2009-12-10) paragraph [0053] paragraph [0132] - paragraph [0145]</p> <p>-----</p>	13-29

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/027497

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: 1-12

In a wireless communication receiving a packet at a media access control (MAC) layer object; generating a first MAC layer output based on the received packet; generating at least one duplicate MAC layer output based on the received packet; and feeding the first MAC layer output and the duplicate MAC layer output to a physical (PHY) layer object.

2. claims: 13-29

In a wireless communication receiving first information in a first transmission time interval (TTI); receiving duplicate information in a second, consecutive TTI; attempting to early decode the information in the first TTI; and attempting to decode the information in the second TTI, when the information in the first TTI has not been successfully decoded.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2013/027497

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2008151409	A1	18-12-2008	CA 2690430 A1 18-12-2008
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			EP 2537266 A2 26-12-2012
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