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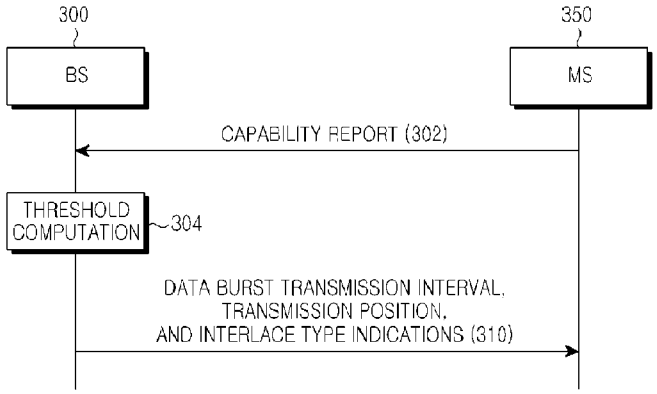
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(54) Title: APPARATUS AND METHOD FOR CONTROLLING A HYBRID AUTOMATIC REPEAT REQUEST OPERATION IN A WIRELESS MOBILE COMMUNICATION SYSTEM

[Fig. 3]



(57) Abstract: An apparatus and method for controlling a Hybrid Automatic Repeat reQuest (HARQ) operation in a transmitter of a wireless mobile communication system using each frame constituted by a plurality of subframes are provided. In the method for controlling an HARQ operation, indication information indicating a subframe position where transmission of a data burst starts and the number of subframes required for transmission of the data burst is transmitted to a receiver through an i-th frame. When the number of subframes does not exceed a threshold, it is determined that the data burst at the subframe position indicated by indication information of an (i+1)-th frame is retransmitted to the receiver. When the number of subframes exceeds the threshold, it is determined that the data burst at the subframe position indicated by indication information of an (i+n)-th frame, where n is a positive integer exceeding 1, is retransmitted to the receiver.

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A. CLASSIFICATION OF SUBJECT MATTER

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean Utility models and applications for Utility models since 1975
Japanese Utility models and application for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal), IEEE xplore

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2006-0195767 A1(BIN CHUL IHM, et al.) 31 August 2006 See page 6 paragraph[0084] - page 9 paragraph[0113]	1-28
A	US 2006-0039299 A1(BIN CHUL IHM, et al) 23 February 2006 See page 5 paragraph[0050] - page 8 paragraph[0101]	1,8
A	US 2007-0300120 A1(HYE JEONG KIM, et al.) 27 December 2007 See page 6 paragraph[0083] - page 10 paragraph[0148]	1,8

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006-0195767 A1	31.08.2006	AU 2005-320417 A1	27.12.2005
		CA 2590858 A1	06.07.2006
		CN 101091339 A	19.12.2007
		EP 1832025 A1	12.09.2007
		JP 2008-526090 A	17.07.2008
		KR 10-2006-0074014 A	30.06.2006
		WO 2006-071049 A1	06.07.2006
US 2006-0039299 A1	23.02.2006	AU 2005-273142 A1	23.02.2006
		AU 2005-273142 A1	17.08.2005
		AU 2005-273142 B2	01.10.2009
		EP 1779546 A2	02.05.2007
		JP 2008-517484 A	22.05.2008
		KR 10-2006-0016191 A	22.02.2006
		KR 10-2006-0029061 A	04.04.2006
		KR 10-2006-0097448 A	14.09.2006
		US 07554985 B2	30.06.2009
		US 2009-0190543 A1	30.07.2009
		WO 2006-019258 A2	23.02.2006
US 2007-0300120 A1	27.12.2007	EP 1855411 A2	14.11.2007
		KR 10-2007-0109313 A	15.11.2007
		WO 2007-129872 A1	15.11.2007