(19) World Intellectual Property Organization

International Bureau





(10) International Publication Number

(43) International Publication Date 9 April 2009 (09.04.2009)

- (51) International Patent Classification: H04L 1/18 (2006.01)
- (21) International Application Number:

PCT/KR2008/005828

(22) International Filing Date: 2 October 2008 (02.10.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

10-2007-0099558 3 October 2007 (03.10.2007)

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WO 2009/045071 A3

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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, 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, 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, ST, 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, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 7 May 2009

(54) Title: APPARATUS AND METHOD FOR TRANSMITTING AND RECEIVING AUTOMATIC RETRANSMISSION RE-QUEST FEEDBACK INFORMATION ELEMENT IN A COMMUNICATION SYSTEM

	CID (16 bits) (211)	LAST (1 bit) (213)	ACK type (2 bits) (215)
BS	N (11 bits) (217)	Rese	erved (2 bits) (219)
MAP LAST	ACK MAP #1 (15	bits) (221-1)	 	
MAP LAST (1 bit)	ACK MAP #2 (15	bits) (221-2)] 	
MAP LAST	ACK MAP #n (15	bits) (221-n)] 	FIG.2

(57) Abstract: ABSTRACT An Automatic Retransmission reQuest (ARQ) data block reception apparatus and method in a communication system is provided. In the ARQ method, an ARQ feedback Information Element (IE) is transmitted to an ARQ data block transmission apparatus. The ARQ feedback IE includes a first field for indicating a Connection IDentifier (CID) of an ARQ connection, a second field for indicating the presence/absence of an additional ARQ feedback IE after the ARQ feedback IE, a third field for indicating a type of an Acknowledgement (ACK) MAP included in the ARQ feedback IE, a fourth field for indicating a Block Sequence Number (BSN) of an ARQ data block, and m ACK MAP fields.





International application No. **PCT/KR2008/005828**

A. CLASSIFICATION OF SUBJECT MATTER

H04L 1/18(2006.01)i

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) IPC H04B, H04L

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 applications for Utility Models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) eKIPASS(KIPO internal) & keywords: "HARQ,ACK,NACK", "feedback", "message*"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2005-064839 A1 (ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTUE et al.) 14 July 2005 See abstract; figures 5,8-14; claims 1-2,9; and their corresponding specifications.	1-30
A	US 2005-0163046 A1 (MARI KOPONEN et al.) 28 July 2005 See abstract, figures 3-4; and claims 1,11.	1-30
A	KR 10-2007-0048432 A (SAMSUNG ELECTRONICS CO., LTD.) 09 May 2005 See abstract, figures 8,12; and claims 1,6,8,12,26,31.	1-30
A	US 5946320 A (PETER DECKER) 31 August 1999 See abstract; figures 4-5; and claims 1,9.	1-30

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

See patent family annex.

- Special categories of cited documents:
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Date of mailing of the international search report

Date of the actual completion of the international search
18 MARCH 2009 (18.03.2009)

19 MARCH 2009 (19.03.2009)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seogu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Moon, Sung Don

Telephone No. 82-42-481-8128



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2008/005828

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2005-064839 A1	14.07.2005	CN 1914844 A	14.02.2007
		EP 1700414 A1	13.09.2006
		EP 1721405 A1	15, 11, 2006
		JP 2007-517458 A	28.06.2007
		JP 2007-520113 A	19.07.2007
		KR 10-2005-0069902 A	05.07.2005
		KR 10-2005-0069903 A	05.07.2005
		KR 10-2007-0015354 A	02.02.2007
		KR 10-0635012 B1	16.10.2006
		KR 10-0684307 B1	16.02.2007
		KR 10-0705505 B1	09.04.2007
		US 2007-277074 A1	29.11.2007
		US 2007-288824 A1	13.12.2007
		WO 2005-064840 A1	14.07.2005
US 2005-0163046 A1	28.07.2005	US 7457305 B2	25.11.2008
KR 10-2007-0048432 A	09.05.2007	None	
US 5946320 A	31.08.1999	DE 69527633 T2	03.04.2003
		EP 0771092 B1	31.07.2002
		EP 0771092 A1	02.05.1997