

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
29 January 2009 (29.01.2009)

PCT

(10) International Publication Number
WO 2009/014401 A3

(51) International Patent Classification:

H04L 29/02 (2006.01)

(21) International Application Number:

PCT/KR2008/004367

(22) International Filing Date: 25 July 2008 (25.07.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/951,961	26 July 2007 (26.07.2007)	US
10-2007-0101689	9 October 2007 (09.10.2007)	KR
61/036,480	14 March 2008 (14.03.2008)	US
10-2008-0041283	2 May 2008 (02.05.2008)	KR
10-2008-0041913	6 May 2008 (06.05.2008)	KR

(71) Applicant (for all designated States except US): **LG ELECTRONICS INC.** [KR/KR]; 20, Yeouido-dong, Yeongdeungpo-gu, Seoul 150-721 (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **IHM, Bin Chul** [KR/KR]; LG Institute, Hogye 1(il)-dong, Dongan-gu,, Anyang-si, Gyeonggi-do 431-080 (KR). **LEE, Wook Bong**

[KR/KR]; LG Institute, Hogye 1(il)-dong, Dongan-gu,, Anyang-si, Gyeonggi-do 431-080 (KR). **KIM, Yong Ho** [KR/KR]; LG Institute, Hogye 1(il)-dong, Dongan-gu,, Anyang-si, Gyeonggi-do 431-080 (KR). **KWAK, Jin Sam** [KR/KR]; LG Institute, Hogye 1(il)-dong, Dongan-gu,, Anyang-si, Gyeonggi-do 431-080 (KR). **RYU, Ki Seon** [KR/KR]; LG Institute, Hogye 1(il)-dong, Dongan-gu,, Anyang-si, Gyeonggi-do 431-080 (KR). **CHUN, Jin Young** [KR/KR]; LG Institute, Hogye 1(il)-dong, Dongan-gu,, Anyang-si, Gyeonggi-do 431-080 (KR). **YUK, Young Soo** [KR/KR]; LG Institute, Hogye 1(il)-dong, Dongan-gu,, Anyang-si, Gyeonggi-do 431-080 (KR).

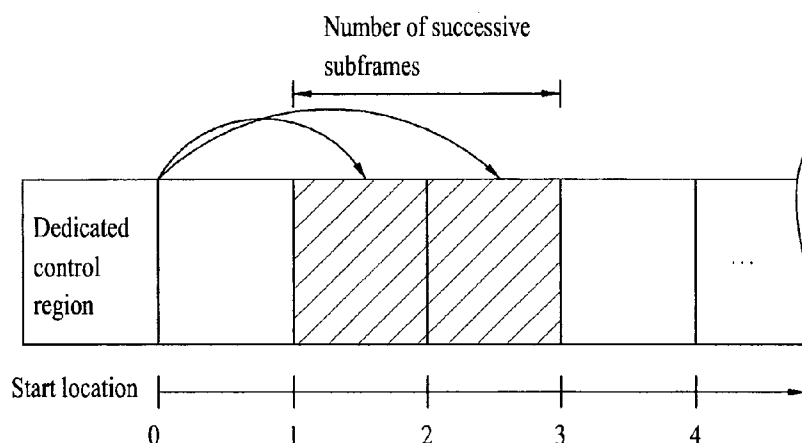
(74) Agents: **KIM, Yong In** et al.; KBK & Associates, 7th Floor, Hyundai Building, 175-9 Jamsil-dong, Songpa-ku, Seoul 138-861 (KR).

(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, 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, ST, SV, SY, TJ,

[Continued on next page]

(54) Title: METHOD FOR TRANSMITTING AND RECEIVING DATA WITH SUPERFRAME STRUCTURE

FIG. 10



(57) Abstract: A method of transmitting and receiving data using a superframe structure is disclosed. A method for transmitting data through a superframe including a superframe header, includes generating the superframe which includes a data region including user data and includes a dedicated control region including data region allocation information indicating resource allocation for the data region, and transmitting the superframe. The dedicated control region is arranged at at least one of locations except for a subframe of the superframe header. A user equipment which does not have to transmit and receive data decodes only data region allocation information using information of the data region indicated by a dedicated control region, thereby minimizing power loss, reducing a feedback delay, and reducing system overhead using a superframe structure.

WO 2009/014401 A3



TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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).

(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,

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:
26 March 2009

A. CLASSIFICATION OF SUBJECT MATTER**H04L 29/02(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 H04L 29/02, H04Q 7/00, H04B 7/00

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), "Keyword: dedicated control region, subframe, superframe, feedback delay, overhead, and similar terms"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2007-0115890 A1 (BYOUNG-HA YI et al.) 24 May 2007 see abstract, paragraphs [0034]-[0066], figure 3	1-22
A	US 7,227,854 B2 (YOUNG-BUM KIM et al.) 05 June 2007 see abstract, column 6 line 9 - column 8 line 52	1-22
A	US 6,980,540 B1 (RAJIV LAROIA et al.) 27 December 2005 see abstract, column 2 line 41 - column 4 line 56, figures 3 and 4	1-22



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

"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

"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

"&" document member of the same patent family

Date of the actual completion of the international search

04 FEBRUARY 2009 (04.02.2009)

Date of mailing of the international search report

04 FEBRUARY 2009 (04.02.2009)

Name and mailing address of the ISA/KR

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

Facsimile No. 82-42-472-7140

Authorized officer

OH, Je Uk

Telephone No. 82-42-481-8222



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2008/004367

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007-0115890 A1	24.05.2007	KR 1020070053052 A	23.05.2007
US 7227854 B2	05.06.2007	US 2004-0058687 A1	25.03.2004
US 6980540 B1	27.12.2005	AU 2001-57941 A1	21.02.2002
		AU 2001-57941 B2	21.02.2002
		AU 5794101 A	21.02.2002
		AU 778564 B2	09.12.2004
		BR 0103286 A	26.03.2002
		CA 2351971 A1	16.02.2002
		CA 2351971 C	01.11.2005
		CA 2351971 A1	16.02.2002
		CN 1190102 C	16.02.2005
		CN 1338878 A	06.03.2002
		EP 1180907 A2	20.02.2002
		EP 1180907 A3	29.05.2002
		JP 2002-125271 A	26.04.2002