



- (51) **International Patent Classification:**
H04B 7/26 (2006.01) *H04W 88/08* (2009.01)
- (21) **International Application Number:**
PCT/KR2012/000805
- (22) **International Filing Date:**
2 February 2012 (02.02.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/441,257 9 February 2011 (09.02.2011) US
61/441,280 10 February 2011 (10.02.2011) US
- (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):** **SEO, Hanbyul** [KR/KR]; LG Institute, #533 Hogye 1(il)-dong, Dongan-gu, Anyang-si, Gyeonggi-do 431-080 (KR). **LEE, Seung-min** [KR/KR]; LG Institute, #533 Hogye 1(il)-dong, Dongan-gu, Anyang-si, Gyeonggi-do 431-080 (KR). **KIM, Kijun** [KR/KR]; LG Institute, #533 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).

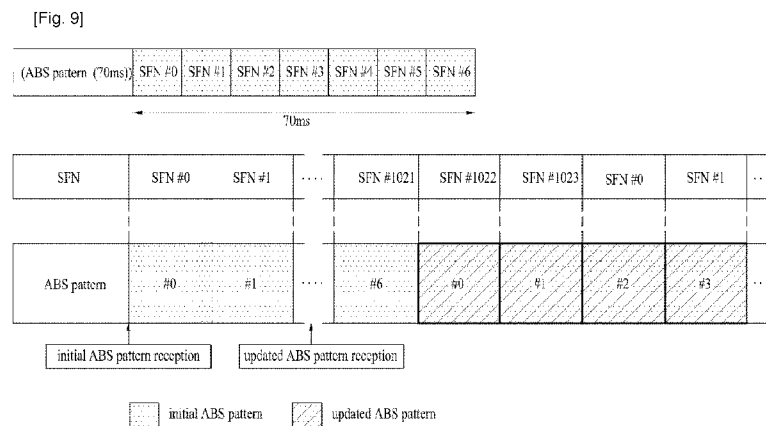
- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, 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).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

- (88) **Date of publication of the international search report:**
18 October 2012

(54) **Title:** METHOD FOR SIGNALING A SUBFRAME PATTERN FOR PREVENTING INTER-CELL INTERFERENCE FROM OCCURRING IN A HETEROGENEOUS NETWORK SYSTEM AND APPARTUS FOR THE SAME



(57) **Abstract:** A method for setting an almost blank subframe (ABS) pattern in a base station of a wireless communication system is disclosed. The method comprises receiving an ABS bitmap pattern from a neighboring base station; setting the ABS pattern of the base station by repeating the ABS bitmap pattern within a previously set number of radio frames; receiving an offset value indicating an application start point of an updated ABS bitmap pattern and an application start of the updated ABS bitmap pattern from the neighboring base station; and setting the ABS pattern of the base station by repeating the updated ABS bitmap pattern from a start subframe of a specific radio frame indicated by the offset value.

WO 2012/108640 A3

A. CLASSIFICATION OF SUBJECT MATTER**H04B 7/26(2006.01)i, H04W 88/08(2009.01)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)

H04B 7/26

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
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: ABS(Almost Blank Subframe) pattern, offset value, bitmap, SFN(System Frame Number), TDD, inter-cell interference;

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CMCC, "Discussion on ist ABS pattern bitmap for TDD", 3GPP TSG-RAN WG1 Meeting #63, R1-106315, 15-19 November, 2010 See sections 2-3.	1-12
A	New Postcom, "ABS signaling considerations for LTE-TDD", 3GPP TSG-RAN WG1 Meeting #63, R1-105940, 15-19 November, 2010 See section 2.	1-12
A	LG Electronics, "Details of eICIC in Macro-Pico case", 3GPP TSG-RAN WG1 Meeting #63, R1-106143, 15-19 November, 2010 See sections 1-2.	1-12
A	InterDigital Communications, et al., "eICIC Macro-Femto: Time-domain muting and ABS", 3GPP TSG-RAN WG1 Meeting #63, R1-105951, 15-19 November, 2010 See sections 2-3.	1-12

 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

28 AUGUST 2012 (28.08.2012)

Date of mailing of the international search report

29 AUGUST 2012 (29.08.2012)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

SEONG, KYOUNG A

Telephone No. 82-42-481-8171



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2012/000805Patent document
cited in search reportPublication
datePatent family
member(s)Publication
date

None