



- (51) **International Patent Classification:**
H04W 72/04 (2009.01) H04W 72/12 (2009.01)
H04W 72/00 (2009.01)
- (21) **International Application Number:**
PCT/SE2013/050565
- (22) **International Filing Date:**
20 May 2013 (20.05.2013)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/65 1,203 24 May 2012 (24.05.2012) US
- (71) **Applicant: TELEFONAKTIEBOLAGET L M ERICSSON (PUBL)** [SE/SE]; S-164 83 Stockholm (SE).

- (72) **Inventors: GÖRANSSON, Bo;** Silverdalsvagen 67, S-191 38 Sollentuna (SE). **HULTELL, Johan;** c/o Degeryd, Erik Sandbergs gata 23, S-169 34 Solna (SE). **NAMMI, Sairamesh;** Ringstedsgatan 39, S-164 48 Stockholm (SE). **BERGMAN, Johan;** Kungsholmsgatan 9, S-1 12 27 Stockholm (SE).
- (74) **Agent: AYOUB, Nabil;** Ericsson AB, Patent Unit Kista RAN2, S-164 80 Stockholm (SE).
- (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, BN, 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, PA, 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.

[Continued on nextpage]

(54) **Title:** COMMON ORDERS FOR A SHARED CONTROL CHANNEL

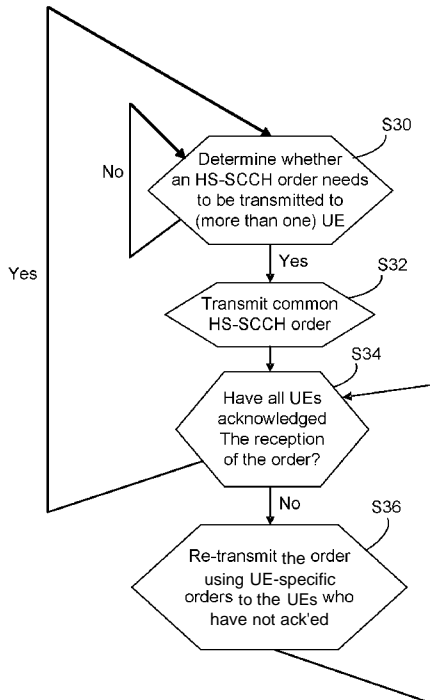
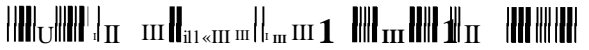


Figure 9

(57) **Abstract:** A radio base station (10) communicates with user equipments (UEs) (20) over a radio interface on a shared control channel in a cell coverage area. A common control channel order (18) is determined for transmission over the shared control channel for a group of multiple UEs in the cell. The common control channel order is associated with a common control channel order identifier and transmitted in the cell over the shared control channel. A UE in the cell coverage area that is shared by multiple UEs receives the common control channel order signal transmitted to the group of multiple UEs over the shared control channel and processes the common control channel order signal to detect the common control channel signal identifier. If the UE determines that common control channel signal identifier matches a common control channel signal identifier previously configured for or stored in each of the UEs in the group, then the UE processes the common control channel order and performs one or more actions in response to the processed common control channel order. In a UTRAN example, an RNC(30) generate and sends the common control channel order identifier to the base station, which in turn, sends the common control channel order identifier to each of the UEs in the group. Then, the base station transmits the common control channel order over the shared control channel to a group of multiple UEs in the cell.





(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, *ML*, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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:

20 March 2014

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE201 3/050565

A. CLASSIFICATION OF SUBJECT MATTER

IPC: see extra sheet

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: H04W

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE, DK, FI, NO classes as above

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

EPO-Internal, PAJ, WPI data, COMPENDEX, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 23981 77 A 1 (ALCATEL LUCENT), 21 December 2011 (2011-12-21); abstract; paragraphs [0016], [0019], [0021], [0029]; claims 1-9	1-29
	--	
X	EP 1921 773 A 1 (NTT DOCOMO INC), 14 May 2008 (2008-05-14); abstract; paragraphs [0004], [0022], [0026], [0045]; claims 1-2, 8	1, 7, 12, 15, 22, 27
A		2-6, 8-11, 13-14, 16-21, 23-26, 27-28
	--	

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

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

Date of the actual completion of the international search

03-02-2014

Date of mailing of the international search report

03-02-2014

Name and mailing address of the ISA/SE
Patent- och registreringsverket
Box 5055
S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer
Sebastian Diskay

Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.
PCT/SE201 3/050565

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 200601 76838 A 1 (LEE YOUNG D ET AL), 10 August 2006 (2006-08-1 0); abstract; claims 1, 11 --	1-29
A	WO 20061 11785 A 1 (NOKIA CORP ET AL), 26 October 2006 (2006-1 0-26); abstract; page 18, paragraph [0028] - page 19, paragraph [001 2] --	1-29
A	EP 2 182745 A 1 (FUJITSU LTD), 5 May 201 0 (201 0-05-05); abstract; paragraph [0003]; claim 1 --	1-29
A	US 200801 98830 A 1 (MOHANTY SHANTIDEV ET AL), 2 1 August 2008 (2008-08-21); claims 1-4 -- -----	1-29

Continuation of: second sheet

International Patent Classification (IPC)

H04W 72/04 (2009.01)

H04 W1 72/00 (2009.01)

H04W 72/12 (2009m)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/SE201 3/050565

EP	23981 77 A 1	21/12/201 1	CN	102934388 A	13/02/201 3
			JP	201 3529041 A	11/07/201 3
			KR	201 30030767 A	27/03/201 3
			US	201 30242842 A 1	19/09/201 3
			WO	201 1160769 A 1	29/1 2/201 1
EP	1921 773 A 1	14/05/2008	CN	101278502 A	01/1 0/2008
			JP	4772432 B2	14/09/201 1
			JP	200706801 1 A	15/03/2007
			KR	2008004851 2 A	02/06/2008
			TW	1330480 B	11/09/201 0
			US	7903630 B2	08/03/201 1
			US	200901 54592 A 1	18/06/2009
			WO	200702951 8 A 1	15/03/2007
US	200601 76838 A 1	10/08/2006	CN	10 1112057 A	23/01/2008
			KR	101057057 B 1	16/08/201 1
			KR	20060090493 A	11/08/2006
			US	7558228 B2	07/07/2009
			ZA	2007061 35 A	28/05/2008
WO	20061 11785 A 1	26/10/2006	CN	10 116731 0 A	23/04/2008
			EP	1872535 A 1	02/01/2008
			US	20090041 024 A 1	12/02/2009
EP	2 182745 A 1	05/05/201 0	CN	101682856 A	24/03/201 0
			JP	48831 80 B2	22/02/201 2
			KR	101096955 B 1	20/1 2/201 1
			KR	201 000051 06 A	13/01/201 0
			US	201 001 18789 A 1	13/05/201 0
			US	846271 5 B2	11/06/201 3
			WO	200901381 0 A 1	29/01/2009
US	200801 98830 A 1	21/08/2008	US	8031 649 B2	04/1 0/201 1